ANNUAL REPORT 2019

ERCIS

European
Research
Center for
Information
Systems

15 YEARS
2004–2019

AUSTRALIA AUSTRIA BELGIUM BRAZIL CZECH REPUBLIC DENMARK ESTONIA FINLAND
FRANCE GERMANY IRELAND ITALY LIECHTENSTEIN LITHUANIA THE NETHERLANDS
NEW ZEALAND NORWAY POLAND PORTUGAL RUSSIA SLOVENIA SOUTH KOREA
SWEDEN SWITZERLAND UKRAINE UNITED KINGDOM UNITED STATES OF AMERICA

www.ercis.org

ERCIS – the European Research Center for Information Systems – is an international network of scientists conducting cooperative research in the field of Information Systems (IS). The Network was founded in 2004 at the University of Münster and is funded by the German State of North Rhine-Westphalia and the University of Münster.

The Network provides new ways of thinking and multi-disciplinary approaches for finding solutions to the problems arising from an ongoing transformation of society and organisations due to the growing impact of IT. ERCIS has dedicated itself to dealing with these challenges through collaboration and exchange of information between research and practice.

ERCIS is notable for excellent communication and uncomplicated initiation of research cooperation and research projects. Among ERCIS' associated major strengths are the personal contacts between researchers, which make it a vibrant network. ERCIS covers a wide range of disciplines associated with IS and perspectives on IS research.

The Network is headed by the *Board of Directors* in Münster, which is composed of one academic director, namely Prof. Dr. Jörg Becker, and eight additional professors all active in the IS research field. Moreover, ERCIS involves numerous internationally renowned researchers from more than 20 *Associated Research Institutions, Personal Members,* as well as members of the *Advisory Board* coming from diverse industry companies.

All ERCIS research partners are experts in a wide variety of disciplines related to IS. Research conducted by ERCIS ranges from fundamental research to application-oriented research. Besides individual research activities of ERCIS members, the Network brings together and supports selected research aspects of IS in *Competence Centres* aimed at strengthening research in specific areas. The Advisory Board members come from various industry sectors, which guarantees that the research conducted at ERCIS is relevant for practice. Regular meetings of the Board of Directors with the Advisory Board members, as well as annual workshops of ERCIS' associated research institutions, ensure continuous, direct and productive exchange of knowledge.

Finally, students and young researchers also benefit from collaboration at ERCIS, as many ERCIS research partners offer exchange programs that last one or two semesters, which gives students an opportunity to acquire international experience. Joint lectures and guest talks organised by several ERCIS members contribute to the internationalisation of teaching.

If you are interested in connecting with the Network, please feel free to contact us! For further information please visit

www.ercis.org

DEAR FELLOW ERCIS PARTNERS AND INTERESTED READERS OF THIS REPORT,

Celebrate good times – come on! We have had several occasions this year to come together and celebrate. First and perhaps the biggest celebration: It was the networks 15th anniversary that we celebrated during several events this year. On the 17th of May, we had our big anniversary event, where we invited all ERCIS partners and friends to Münster to reflect about the past and discuss about the future. In addition to all those festivities, we, again, successfully applied for several new joint projects, welcomed new academic ERCIS members as well as advisory board members and spent time together on various events, be it conferences, workshops, or guest lectures around the world. Find out more about everything that has happened by reading this year's "anniversary issue" of our Annual Report!

Several EU-funded projects that influenced our work in the network during the last years, were successfully brought to an end in 2019. The RISE_BPM project, the MASTIS project, the EQUALIST project and many more left their footprint in the network and the consortia already think about following applications to continue the collaborations in the future. Following the smooth collaboration within the RISE_BPM project, we asked the University of Sevilla if they would like to join the ERCIS network as new institutional member in Spain. We then invited them to this year's Annual Workshop to present themselves to the other network members. In addition, we invited the IE Business School from Madrid to also present themselves as potential new institutional members, since Isabel Ramos from the University of Minho recommended them. Both Spanish Universities left a very good and committed impression and the ERCIS board of directors decided in October to affiliate both Universities as institutional members in Spain.

Talking about new ERCIS members: In addition to the new Spanish partners we finally signed the ERCIS certificate with the University of Sao Paolo (USP) in Brasil. Thus, a warm welcome to USP and, before you wonder about why Brasil becomes a member of a European network: I always like to talk about "Greater Europe" when I talk about ERCIS! It is about the people we want to work with whether they are located in Brasil, or the US, New Zealand, Australia, or South Korea: they all belong to our growing ERCIS family around the world! The USP certificate was signed during our Annual Workshop in Loughborough this year. You cannot imagine the beautiful surrounding of an old mansion and the surrounding english garden that the organizers of the workshop selected for our workshop dinner. Just have a look at the article about this year's Annual Workshop! In this context: Thanks again, Crispin Coombs, Peter Kawalek, Chris Holland, Boyka Simeonova and Ruth Cufflin for hosting us this year! We had a wonderful time in the UK and regardless of all political unpredictability, I am looking forward to great collaborations with you in the future! For next year, Dariusz Król invited us to the University of Wrocław in Poland and I am really looking forward to visit this beautiful town again.

In addition to all those reasons for celebrating the ERCIS network, I personally had one big reason to commemorate: It was my 60th birthday at the beginning of this year and Katrin Bergener, Armin Stein, and Michael Räckers gave me a big surprise by handing over a honorary publication with the title "The Art of Structuring". I was overwhelmed when I realized that so many ERCIS partners contributed to this book as authors. Thus, let me thank you all again for this great conspirational ERCIS endeavour! I really didn't have a clue that something this huge was in preparation (I should definitely have a closer look at what my staff does behind my back 😊).

Looking back at this great year of celebrations, I am proud to see so many different activities that were possible because of all of us being members and contributing to the ERCIS network. It truly is "ERCIS – it's what we make of it!"

All the best,

Jörg Becker

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2004 – 2019:
15 SUCCESSFUL YEARS OF THE ERCIS NETWORK

2019 is the year to celebrate 15 years of the IS research network. Since 2004, our members published numerous publications together, applied for and received funding for many trans-national and European Commission funded projects, were active for the community in editorial boards, as conference chairs, or during PhD seminars. We worked with and consulted industry, governments, and NGOs. We had workshops with our International Partners and our Advisory Board, always resulting in tighter bonds and some outcome.

On May 17th, 2019, it was time to meet and look back in time, reflect on the now, and peek into the crystal ball. Together with the 50th anniversary of the School of Business and Economics of the University of Münster, we invited the Department of Information Systems alumni, international partners, advisory board members, and friends to still one of the "most liveable cities in the world". The 100 slots were booked in no time, which resulted in a full house.

The celebrations were kicked-off by the University of Münster's Vice-Rector for Internationalization and Knowledge Transfer, Prof. Dr. Michael Quante, who, considering recent political developments, stressed the importance of international research collaboration "in these crazy times". Obviously, ERCIS serves as a role model here. Afterwards, Prof. Dr. Jörg Becker gave a retrospective on what happened until today, and what lead to the ERCIS structure and the success we see today.

Before lunch break, the attendees were introduced to some exhibitions that take place at the Headquarters in the form of Pech Kucha talks by Dr. Nico Clever (Design Thinking in Virtual Reality), Dr. Bettina Distel (Trust in a Digital Society: Whom to trust?), Dr. Christian Grimme (Towards the Investigation of Fake News: A Gamified Approach), Jana Mattern (Finding patterns of sustainable high-performance work), and Prof. Dr. Stephan Meisel (LearnIT: Maximizing the Business Value of Energy). For each

of the talks, a small exhibition invited the guests to try out the presented artefacts.

The event concluded with a panel about "IS Challenges of the Next Decade", featuring Prof. Dr. Isabel Ramos of the University of Minho, Portugal, as representative of our International Partner Network; Adam Widera, representing the Competence Center Crisis Management; Wolf von Wendorff, representing our Advisory Board member CLAAS; and Prof. Dr. Jens Pöppelbuß as one of our Personal Members. The panel was moderated by Prof. Dr. Jörg Becker. Concluding, one of the biggest challenges aside from the ones the environment poses to us (also thanks to us humans), is strengthening collaborative research and education to be able to tackle those.

We are committed to do exactly that!

2004 – it all started. Founding directors: Prof. Dres. Kuchen, Hoeren, Müller-Funk, Klein, Becker, Vossen, Grob

2004
Founding of the ERCIS Network

+ Copenhagen Business School (Denmark)
+ Kaunas University of Technology (Lithuania)
+ Queensland University of Technology (Australia)
+ Turku School of Economics (Finland)
+ University of Gdansk (Poland)
+ University of St. Gallen (Switzerland)
+ Vienna University of Economics and Business (Austria)

2005
Establishment of the first Competence Centers

First ERCIS@ECIS

+ Kedge Business School (France)
+ University of Maribor (Slovenia)

The first Network Meeting in Münster 2007

2007
First Network Meeting in Münster

+ University of Liechtenstein (Liechtenstein)

First meeting at the International Conference on Information Systems (ICIS) 2008 in Paris, France

2009
First Annual Report
First Doctoral Consortium on the Ijsselmeer

+ University of Waikato (New Zealand)

First international ERCIS Annual Workshop in Vaduz, Liechtenstein, 2010

2006
First Joint EU project (PICTURE)
First Advisory Board Meeting

+ Charles University in Prague (Czech Republic)

The first ERCIS Launchpad 2008

2008
First ERCIS Launchpad

+ National Research University – Higher School of Economics Moscow and Nizhny Nivgorod (Russia)
+ Stevens Institute of Technology (USA)

The first ERCIS Doctoral Consortium on the Dutch Ijselmeer 2009

2010
First of the Annual Workshop Series in Liechtenstein

+ LUISS Guido Carli University (Italy)
+ University of Agder (Norway)

2004–2019:
15 SUCCESSFUL YEARS OF THE ERCIS NETWORK

First Virtual Seminar with various ERCIS partners in 2014

2011

+ *University of Twente (The Netherlands)*

2012
First ERCIS Virtual Seminar

2014

+ *Luleå University of Technology (Sweden)*
+ *University of Minho (Portugal)*

First „ERCIS Disrupts Münster"

2015
Münster hosted the 23rd European Conference on Information Systems (ECIS)

+ *KU Leuven (Belgium)*
+ *Simon Kuznets Kharkiv National University of Economics (Ukraine)*

Hosting the 23rd European Conference on Information Systems in Münster

2016

+ *Pohang University of Science and Technology (South Korea)*
+ *University of Leiden (The Netherlands)*

2017
Guimarães hosted the 25th ECIS

+ *National University of Ireland, Galway (Ireland)*
+ *Tallinn University of Technology (Estonia)*
+ *Wroclaw University of Science and Technology (Poland)*

Our 2018 Advisory Board Meeting in Münster

2018

+ *Loughborough University (UK)*

Our Annual Workshop in Luleå, Sweden, 2018

Welcoming the University of São Paulo (USP) as new member during the 2019 Annual Workshop in Loughborough, UK

2019

+ *IE Business School (Spain)*
+ *University of São Paulo (Brazil)*
+ *University of Sevilla (Spain)*

Celebrating 15 years of the ERCIS Network, May 17, 2019

15 YEARS
2004–2019

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10TH ANNUAL ERCIS WORKSHOP IN LOUGHBOROUGH

SAVE THE DATE
The next Annual Workshop will take place in Wrocław (Poland), September 21st–23rd 2020.

Participants of the ERCIS Annual Workshop

10TH ANNUAL ERCIS WORKSHOP

Following Bordeaux *(France)* in 2011, Kaunas *(Lithuania)* in 2012, Turku *(Finland)* in 2013, Rome *(Italy)* in 2014, Guimarães *(Portugal)* in 2015, Kristiansand *(Norway)* in 2016, Leiden *(Netherlands)* in 2017, Luleå *(Sweden)* in 2018, this year's ERCIS Annual Workshop took place at the Centre for Information Management (Loughborough University) in Loughborough, United Kingdom. Peter Kawalek and Crispin Coombs kindly hosted the workshop from the 16th to the 18th of September. In this year's workshop, we had participants from Brazil, Finland, Germany, Lithuania, Norway, Poland, Portugal, Spain, and the United Kingdom.

Following the traditional structure, the ERCIS annual workshop started with a welcome reception at the Elite Athletes hotel on the university campus. After a warm welcome by Tom Jackson, the Associate Dean [Research] of the School of Business and Economics and Peter Kawalek, the director of the Centre for Information Management (CIM) at Loughborough University, Armin Stein, the managing director of the ERCIS, gave a retrospective on the ERCIS Network. He talked about how everything started and how the network evolved in the last 15 years since its establishment. During his presentation, he mentioned many examples of cooperation and knowledge sharing within the network.

After that Danny Crowther, who is Hockey Coordinator and leads performance analysis for both the men's and women's hockey teams in Loughborough, held an interesting talk about "Loughborough Sport: 'The Winning Formula? People, Analysis & Peripherals'". He gave us some insights on how games and training sessions are analysed to improve the individual and team performance. While having supper and drinks together, the welcome reception ended with many great conversations in a relaxed atmosphere.

The first workshop day started at the West Park Teaching Hub with a recap of the activities and projects of the network since the last Annual Workshop in 2018 by the academic director of the ERCIS, Jörg Becker.

Afterwards our newest member of the network, the University of São Paulo (USP) was introduced by Marcelo Fantinato. Welcome to the network! We look forward to continuing our fruitful collaboration.

Also, we had two applicants for a membership who also presented themselves and their universities. Since both are from Spain, it was important to clarify that the areas in which they operate differ and possibly complement each other.

Álvaro Arenas presented the Information Systems and Technology Department of the IE Business School of the IE University Madrid and Manuel Resinas presented the ISA – Ingeniería del Software Aplicada (Applied Software Engineering) of the Department of Computer Languages and Systems of the University of Seville. We are very happy to welcome both universities to our network!

This session was followed by Crispin Coombs (CIM Loughborough) who explained the plan for the afternoon workshop on the ERCIS paper theme: 'What is it about humanity that we can't give away to machines'. Afterwards Patrick Stacey gave a great talk, which inspired the participants for the discussion in the afternoon. He finished his presentation 'Towards a New Humanism. Or are we too late?' with four themes for the afternoon session: Crime & Conflict, Jobs, Attention, and Wellbeing.

After lunch, the afternoon started with Crispin Coombs explaining everything regarding the workshop, which took place in the style of a world café. The discussion took place in three rotations on four tables, one for each theme from the inspiration session before lunch. Each table had a table host that stayed on the table and collated the discussion using post-its on table

flip-charts and gave feedback to the whole group. Besides, the table hosts are co-authors of the paper and wrote up the discussion that took place on their table. The afternoon session closed by a final wrap up from each of the hosts who summarized the aspects of the discussions at their table for the whole group of participants.

In the evening, we went to a fantastic location for the workshop dinner. Prestwold Hall, a country house in Leicestershire, was the perfect place to end the day while enjoying the sunset in the beautiful garden and having great conversations over dinner. Additionally, we had the Official Signing Ceremony where Jörg Becker, Marcelo Fantinato and Bernd Hellingrath signed the USP's Certificate of Membership.

On the last day of the workshop, we had a recap on recent activities of the ERCIS Competence Centers. The Competence Center Digital Transformation in SMEs presented the Virtual Open Innovation Lab (VOIL) project in which several ERCIS partners (WWU, UMINHO, KTU and UiA) are involved. Afterwards, it was all about funding calls, possibilities for collaboration in projects and teaching. After a warm farewell by our hosts, the workshop closed with a joint lunch before everybody took the journey back home.

SHORT NEWS
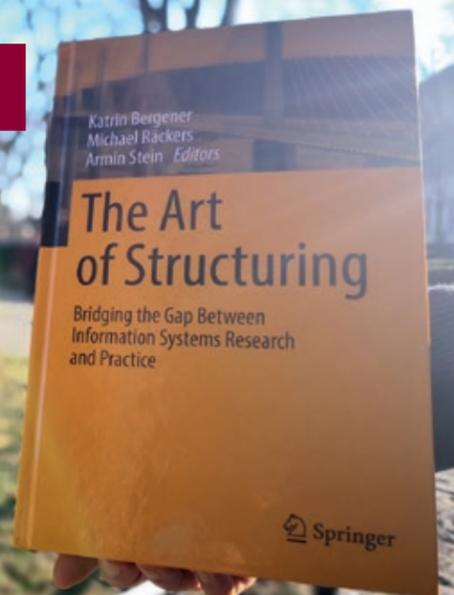
HONORARY PUBLICATION "THE ART OF STRUCTURING"

"The Art of Structuring – Bridging the Gap Between Information Systems Research and Practice" – is the title of a publication in honor of. Jörg Becker's 60th birthday. With 81 authors from 13 countries involved, the book gives various insights on how to structure models, data, processes, organizations, and technologies as well as visionary chapters on the topic. The publication was handed over during the WI conference in Siegen on the 25th of February 2019. Colleagues, friends, as well as long-term companions from the IS community gathered for a secret party and successfully managed to surprise Jörg Becker with the party as well as his "Festschrift".

LECTURE NOTES IN INFORMATION SYSTEMS AND ORGANIZATION INVITES SUBMISSIONS

The Springer series Lecture Notes in Information Systems and Organization (LNISO), started in 2012 by the LUISS IS group, invites ERCIS members to propose new volumes. LNISO is a series of scientific books that explore the current scenario of information systems, in particular IS and organization. The focus on the relationship between IT, IS and organization is the common thread of this collection, which aspires to provide scholars across the world with a point of reference and comparison in the study and research of information systems and organization. LNISO is the publication forum for the community of scholars investigating behavioral and design aspects of IS and organization. Among others, ERCIS partners from Italy, Switzerland, and Liechtenstein are on the series editorial board.

BEST PAPER AWARD FOR ERCIS RESEARCHERS

Hui Wang, Michael Emmerich, and Aske Plaat (LIACS) have been rewarded the Best Paper Award at the BNAIC Conference for their work on classical reinforcement learning for general game playing. The conference was held in November 2019, in 's Hertogenbosch, The Netherlands, and annually brings together ca. 100–150 researchers of the Benelux Artificial Intelligence Community.

ERCIS WELCOMES THREE NEW INSTITUTIONAL MEMBERS AS WELL AS SEVERAL VERY YOUNG PERSONAL MEMBERS

The Network is happy to welcome two new Institutional Members from Spain: The University of Seville, and the IE Business School (IEBS) from Madrid! The University of Seville (UoS) will be represented by Adela del Río Ortega and Manuel Resinas. Research topics are Software Engineering, Cloud and Services, and Business Process Management. IEBS will be represented by Alvaro Arenas. The research in Madrid focusses on Digital Innovation, Information Security and Privacy, Analytics and Machine Learning, and the Economy of Information Systems.

After a long-lasting fruitful collaboration between the University of São Paulo (USP, Brazil) with the Brazil Centre of the University of Münster, the USP became the first official ERCIS Institutional Member in South America! USP will be represented by Marcelo Fantinato.

Furthermore, we welcome Iris Maria from the University of Liechtenstein, and Leonhard Adam from the University of Münster! It also seems that Nina (Vienna University of Economics and Business) enjoys wearing her personal ERCIS Body!

COLLABORATION OF ERCIS MEMBERS IN CHAIRING THE ECIS2020 TRACK N°20: DIGITIZED ACTING IN DIGITAL SOCIETIES: THE BRIGHT AND THE DARK SIDE OF ONLINE COMMUNITIES

University of Minho (Isabel Ramos) is co-chairing the track 20 of ECIS2020 – Digitized acting in digital societies: the bright and the dark side of online communities. The other co-chairs that are members of ERCIS are Øystein Sæbø (University of Agder) and Alessio Braccini (individual member at Università degli Studi della Tuscia). The track is also co-chaired by Tommaso Federici from Università degli Studi della Tuscia in Italy. The track invites submissions that critically address the online communities' domain to further the debate on their bright and the dark sides, by contributing to the knowledge on how they affect people and organizations in digital societies. ECIS2020 is now accepting submissions and until November 29th, 2019.

UNIVERSITY OF LIECHTENSTEIN RELEASES FOURTH AIS GLOBAL INFORMATION SYSTEMS EDUCATION REPORT

At the end of 2019, the fourth collection of global information systems education is released by Prof. Dr. Jan vom Brocke (University of Liechtenstein), Prof. Dr. Bernhard Tan (National University of Singapore), Prof. Dr. Heikki Topi (Bently University, Waltham, Massachusetts, USA), and Dr. Markus Weinmann (Erasmus University Rotterdam, Netherlands). This report, the most comprehensive collection of study programs in the field of information systems worldwide, contains more than 3,100 courses offered in more than 450 programs in 43 countries. By editing this report, the University of Liechtenstein takes a leading role in fostering competencies in the digital economic environment.

Kick-Off VOIL

KICK-OFF MEETING OF THE PROJECT VIRTUAL OPEN INNOVATION LAB (VOIL)

On November 4–5 the Kick-Off meeting of the project VOIL took place (ERASMUS+ KA203 – Strategic Partnerships for higher education) in Münster. The project aims at developing a curriculum to guide the learning of emerging technologies and assess their potential for innovating and digitally transform SMEs. The project is coordinated by the University of Muenster and includes nine partners in seven European countries. Three other partners belong to ERCIS: Kaunas University of Technology, University of Agder, and University of Minho.

STUDENT EXCHANGE PROGRAMME BETWEEN THE UNIVERSITY OF MÜNSTER AND POSTECH

The University of Münster and POSTECH have made an agreement about student exchange programmes. This agreement will be an excellent opportunity for promoting student exchange opportunities between the two universities. This partnership will help students acquire international experiences in Europe and Asia while building technical expertise in their respective fields.

EUROSYMPOSIUM 2019 IN GDANSK

Eurosymposium

On 19th of September 2019, the Department of Business Informatics at the University of Gdansk, Poland, organized an annual conference, the 12th Eurosymposium 2019, under auspices of AIS SIGSAND group. The participants, including the keynote speakers, Prof. Matti Rossi, Immediate Past President of AIS, presented 13 papers. The papers were published in Springer series LNBIP.

UNIVERSITY OF MÜNSTER – CHAIR FOR INFORMATION SYSTEMS AND INFORMATION MANAGEMENT

ABOUT THE INSTITUTION

The Chair for Information Systems and Information Management at the University of Münster, directed by Prof. Dr. Dr. h.c. Dr. h.c. Jörg Becker, Professor h.c. (NRU-HSE, Moscow), currently comprises ten postdocs and 19 research assistants. The courses offered by the Chair for BSc and MSc in Information Systems study programs include Application Systems, Information Modeling, and Workflow Management (Process Modeling field), as well as Data Management and Management Information Systems and Data Warehousing (Data Modeling field). Moreover, the courses Retail and Production Planning and Control cover both Process Modeling and Data Modeling in their respective domains. Members of the Chair are involved in research projects funded nationally and internationally. They publish results of their work in journals like BISE (Business & Information Systems Engineering), BPMJ (Business Process Management Journal), Electronic Markets, EMISA (Enterprise Modeling and Information Systems Architectures), ISeB (Information Systems and e-Business Management), and GIQ (Government Information Quarterly), as well as in conference proceedings like ICIS (International Conference on Information Systems), ECIS (European Conference on Information Systems), ER (International Conference on Conceptual Modeling), and HICSS (Hawaii International Conference on System Sciences).

RESEARCH TOPICS

Conceptual modeling has become a mainstream method for describing, designing, and reorganizing Information Systems in the last decade. Many large companies use conceptual models for tasks like business process reengineering, software introduction, and compliance management. Conceptual modeling, when being transferred into practice, supports the creation of business value for companies and governmental organizations.

Retail is an area of research that is focused on organizations and application systems in the respective domain including wholesale, stationary retail, and e-commerce. Focal topics to account for interdependencies between an organization and an application system involve process management and conceptual modeling in retail, as well as Enterprise Resource Planning (ERP) systems.

E-Government deals with the aspects of administrative processes and services within governmental and inter-governmental organizations and the citizens and businesses using Information and Communication Technology (ICT). E-Government links the field of strategic management with aspects of process management and economic viability and focuses on front- and back-office. E-Government topics can be addressed in terms of content, as well as from technical and conceptual perspectives.

Service Science research addresses different aspects of servitization - the integration of industrial machinery with customized service offerings without selling physical goods. Our research is focused on understanding and facilitating the creation of value in service systems, which involves interactions between service providers and service customers. The goals of the Service Science team are to develop a sound theory on service phenomena and to design innovative IT artifacts supporting competitive edge of the service economy.

SELECTED CURRENT RESEARCH PROJECTS

In recent years, a rapid increase in racist, political and religiously motivated hate commentary has led many newspaper editors to deactivate their online comment functions on their websites. While this is understandable from an economic point of view for the individual publishers, serious problems for the public discourse arise in view of restriction quotas of up to 50 %. The MODERAT! project aims to use an integrative and interdisciplinary approach to develop software tools and a web platform that will enable operators to moderate web debates with significantly less effort. Comments are pre-analyzed automatically, so that a smaller total number of comments have to be reviewed manually. In this way, media houses and publishers should be able to offer web debates again on their own websites and thus enter into a more active exchange with the readership.

For more information, please visit:
https://www.moderat.nrw/

Rapid developments in digitalization pose pressure for firms to innovate & transform their businesses by implementing digital technologies & business models. Many firms struggle with understanding the opportunities & consequences of digitalization. These difficulties are particularly demanding for small firms due to their general lack of resources, knowledge & skills. In order to accelerate the digital transformation of small & medium enterprises, higher education institutions need to adopt effective strategies to develop advanced digital skills in their students, future employees of these companies. Therefore, the target groups of this project are educators & students in Universities, young workers & entrepreneurs/managers of small & medium enterprises. The project VOIL – Virtual Open Innovation Lab has two strategic objectives: (1) to raise awareness about the potential of emerging technologies for the digital transformation of micro, small & medium enterprises, & (2) to design a pedagogical model for simulation-based learning of advanced digital competencies.

For further information, please visit:
https://www.voil.eu/

AWARDS

Both Prof. Becker and Dr. Ann-Kristin Cordes received the "Outstanding Reviewer Award" at the "14. Internationale Tagung Wirtschaftsinformatik" (WI 2019) in Siegen in February 2019.

Jan H. Betzing, Marco Niemann and Ingo Berendes (University of Paderborn) received the "Best Demo Award" for their "BeaT-Algorithm", an algorithm for Bluetooth-tracking of mobile devices, at the "14. Internationale Tagung Wirtschaftsinformatik" (WI 2019) in Siegen in February 2019.

SELECTED PUBLICATIONS

Please see https://www.wi.uni-muenster.de/department/groups/is/publications for a complete list of publications.

Betzing, J. H., Tietz, M., vom Brocke, J., & Becker, J. (2019). The impact of transparency on mobile privacy decision making. Electronic Markets, 2019.

Ellwart, T., Ulfert, A.-S., Antoni, C. H., Becker, J., Frings, C., Göbel, K., Hertel, G., Kluge, A., Meeßen, S. M., Niessen, C., Nohe, C., Riehle, D. M., Runge, Y., Schmid, U., Schüffler, A., Siebers, M., Sonnentag, S., Tempel, T., Thielsch, M. T., & Wehrt, W. (2019). Intentional Forgetting in Socio-Digital Work Systems: System Characteristics and User-related Psychological Consequences on Emotion, Cognition, and Behavior. AIS Transactions on Enterprise Systems, 4(1).

Hertel, G., Meeßen, S. M., Riehle, D. M., Thielsch, M. T., Nohe, C., & Becker, J. (2019). Directed Forgetting in Organizations: Positive Effects of Information Systems on Mental Resources and Well-being. Ergonomics (TERG), 62(5), 597–611.

Riehle, D. M., Fleischer, S., & Becker, J. (2019). A Web-Based Information System to Evaluate Different Versions of IT Artifacts in Online Experiments. AIS Transactions on Enterprise Systems, 4(1).

Scholta, H., Mertens, W., Kowalkiewicz, M., & Becker, J. (2019). From one-stop shop to no-stop shop: An e-government stage model. Government Information Quarterly, 36(1), 11–26.

Scholta, H., Niemann, M., Delfmann, P., Räckers, M., & Becker, J. (2019). Semi-automatic inductive construction of reference process models that represent best practices in public administrations: A method. Information Systems, 84 (September 2019), 63–87.

CONTACT DETAILS

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DISSERTATIONS

Betzing, Jan H.: Digitalization of High Street Retail: Design, Development, and Evaluation of a Multi-sided Digital Community Platform

Höhenberger, Steffen: Prozessmanagement für die DIN EN ISO 9001:2015

Ogonek, Nadine: Imparting Electronic Government Competences – Requirements, Concepts, and Tools

Riehle, Dennis M.: Digitalisation and Automation of Compliance Management – A Model-based Method for Ensuring Business Process Compliance

UNIVERSITY OF MÜNSTER – INSTITUTE OF MEDICAL INFORMATICS

AG Digital Health, MDM-Portal – © Fa. Livingpage, Münster

Institut für Medizinische Informatik
IMI

ABOUT THE INSTITUTION

The Institute of Medical Informatics (IMI) is dedicated to research and teaching for the full range of informatics applications in medicine. It was founded in 1973 and belongs to the Medical Faculty. Since 2009 it is headed by Martin Dugas. It provides lectures, seminars, and courses in small groups regarding Medical Informatics for medical as well as informatics students. The institute has a long tradition regarding research on information systems in healthcare. Nowadays, the future of information systems in healthcare, specifically regarding electronic health records (EHRs), is a key research focus. Personalised medicine is built upon clinical and molecular data. Therefore data mining and pattern recognition techniques for genomic data, in particular derived from next-generation sequencing (NGS) of cancer tissue, is an important research focus.

RESEARCH TOPICS

IMI focuses on informatics for personalised medicine. Due to the digital revolution, the relevance of informatics within all fields of medicine is constantly rising. There is a wide scope of applications, ranging from molecular biology over clinical medicine to public health.

The integration of clinical and molecular data, especially analysis of next-generation sequencing in cancer research, is a well-established focus of the institute with national and international cooperations for many years. The rapid increase in data volumes of high-throughput sequencing in molecular medicine ("big data") poses constant challenges from an informatics point of view.

A major proportion of the data needed for clinical studies is also relevant for routine patient care. At present, data for studies and patient care are managed in separate systems. Hence, design and efficient implementation of interoperable information systems in healthcare is a major research topic. Open Metadata is key for interoperability. Specific research topics are data models with semantic annotations and methods for metadata management. Application fields are EHR and electronic data capture (EDC) systems.

CURRENT RESEARCH PROJECTS
Digital Health

The world-wide largest public portal of medical data models *(https://medical-data-models.org)* is managed by IMI. It is a registered official European Research Infrastructure. To date it contains 21.000+ data models and 500.000+ data items with semantic annotations. These data models are available in 18 download formats, in particular CDISC ODM, HL7 FHIR and openEHR ADL. MDM has 1.400+ users worldwide. Recently GUIs in Spanish, Italian, French, Portuguese, Swedish and Dutch were added. The IMI project mobile patient questionnaires *(http://mopat.uni-muenster.de)* integrates EHR and patient reported outcomes. Currently this software tool is applied successfully in a large European study with multilingual data collection in the field of dermatology and in the DFG clinical research unit "Translational Pruritus Research" (CRU 2690). Several new projects regarding Medical Apps were started in 2019.

MoPat - Mobile Patient Questionnaires

IMI is now part of the HiGHmed-Consortium *(www.highmed.org)*, which is funded by the Federal Ministry of Education and

Research in the context of the German Medical Informatics Initiative. Münster is actively involved in the use case infection control: a software system is developed to analyse various data sources from hospitals, with the aim to detect potentially dangerous germs as early as possible. This automated early warning system will help to protect patients from new infections, but also to understand their causes and how infectious diseases spread.

SPONSORED BY THE

Federal Ministry of Education and Research

Biomedical Informatics

IMI participates in the DFG clinical research group "Male Germ Cells" (CRU 326).

The work on MDS-RIGHT, a European project coordinated by Nijmegen University, is progressing to analyse mutations in Myelodysplastic Syndrome (MDS). MDS-RIGHT assesses approximately 1000 patient cases with Next-Generation Sequencing (NGS) technology. IMI performs bioinformatics for project partners from the Netherlands, France, Sweden and Spain. About one third of MDS patients develop leukemia - the objective of the project is to improve diagnostics and therapy using biomarkers from NGS.

MALE GERM CELLS
from Genes to Function
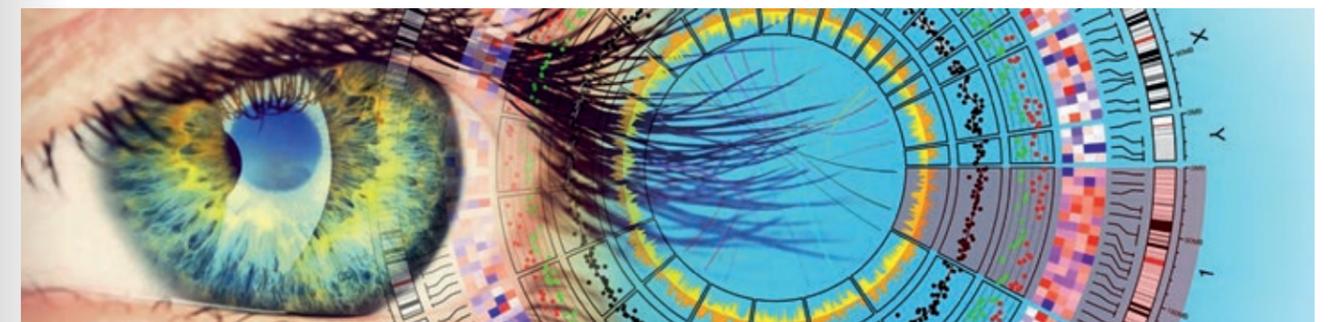
PUBLICATIONS

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UNIVERSITY OF MÜNSTER –
CHAIR FOR INFORMATION SYSTEMS AND LOGISTICS

ABOUT THE INSTITUTION

Today's supply chains (SC) have to cope with growing uncertainties and complexity, e.g., from increasingly volatile customer demand, natural or human threats, or through an increasing number of actors in the value-added process. Tackling these issues is the primary objective of the Chair for Information Systems (IS) and Supply Chain Management (SCM), held by Prof. Dr.-Ing. Bernd Hellingrath. In particular, the chair develops application-oriented research contributions in the areas of SCM, logistics and operations management facilitated by IS. A specific focus lies in investigating the current trend of digitalized supply chains, by considering the application of new technologies like machine learning or supply chain analytics and the opportunities through digital transformation. In this context, research is fostered by a culture of internationalisation, exemplified by the growing number of international research partners and projects conducted.

RESEARCH TOPICS

Digitalized Supply Chain: Digitalization is omnipresent and has enormous impacts on supply chains. Emerging technolo-gies like cloud computing, Artificial intel-ligence, and digital platforms are part of digitalized supply chains. The research group explores application possibilities and investigates digitalization levers that affect business models.

Industrie 4.0: Research regarding Industrie 4.0 aims to keep and enhance the compet-itive advantage of German manufacturing companies worldwide by increasing the ca-pabilities of producing customer-specific goods efficiently and effectively. The group is developing methods to evaluate the ap-plicability of decentralized production ar-chitectures for different types of manufac-turing processes in practice. Furthermore, their implementation is analyzed from the Enterprise Architecture perspective.

Predictive Maintenance/ Spare Parts Man-agement: The early identification of ma-chine breakdowns by condition monitoring enables more precise planning and man-agement of spare parts and maintenance services. The group focuses on approaches and data analytics methods for improved diagnostics and prognostics in predictive maintenance, which have been successful-ly applied with several companies. Moreo-ver, decision support for collaboration and coordination of actors in corresponding spare parts supply chains is developed.

Sales & Operations Planning (S&OP): Now-adays, cross-functional integration within a company and along the supply chain is essential for business success. S&OP is a tactical planning process that addresses this challenge by continually aligning de-cisions in sales, marketing, product de-velopment, finance, and operations. The group investigates state-of-the-art S&OP implementations and develops concepts to facilitate efficient industrial applica-tions.

Humanitarian Logistics: Supply chain and logistics management are crucial for effec-tive disaster response. The group conducts research on modeling, performance meas-urement, and simulation of humanitarian supply chains as well as the design and evaluation of supporting information sys-tems.

Supply Chain Security: The effective pre-vention of and fast recovery from theft, smuggling, and sabotage is a constant challenge in the ongoing competition be-tween criminals and supply chains. Ad-vances in Enterprise Security Architecture Management align strategic objectives and integrated security into a security-by-design concept. Enterprise architecture, as well as business process management tools for enhanced security, have been evaluated in recent projects with European postal services.

RESEARCH PROJECTS

DRIVER+ (Driving Innovation in Crisis Management for European Resilience) is a project funded under the 7th Framework Programme of the European Commission. Its main aim is to cope with current and future challenges due to increasingly se-vere consequences of natural disasters and terrorist threats, by the development of innovative solutions that are addressing the operational needs of practitioners. The chair is a member of the review board and contributes to the development, applica-tion, and evaluation of the test-bed meth-odology.

Within the BMBF funded project Biskit (Blut-Informationssystem für Kriseninter-vention und -management) IS-based sup-port for planning and execution of blood supply chains is developed in cooperation with the partner-country South-Africa. The group is creating simulation models to analyze the behavior of the blood supply chain in times of crisis and builds Enter-prise Architecture models to conceptualize software solutions for these tasks.

PROBRAL is a mobility program between the chair and PUC in Rio de Janeiro, funded by DAAD and CAPES. The contextual goal of the project is to develop concepts that guide the successful implementation and transformation of the S&OP process.

EVENTS

Within the project DRIVER+, several events took place:

a. In April, the DRIVER+ Trial Guidance Methodology was identified as a po-tential standard for assessing inno-vations in Crisis Management by the German Institute for Standardization (DIN). For this purpose, a CEN Work-shop Agreement (CWA) was initiated to explore the interest of the commu-nity further. The CWA is chaired by Prof. Dr.-Ing. Hellingrath and should be fi-nalized by April 2020.

b. In May, Prof. Dr.-Ing. Hellingrath and Adam Widera co-chaired the Logistics and Supply Chain Management track at the 16th International Conference on Information Systems for Crisis Re-sponse and Management in Valencia, Spain.

- In January and June, Prof. Felipe Scavar-da from PUC in Rio de Janeiro visited our group. During this time, Prof. Scavarda gave a business administration lecture about Supply Chain Logistics Manage-ment and actively engaged in the S&OP research conducted by the group.

- In 2019, the chair celebrates its 10th an-niversary. During the last ten years, al-most 200 scientific works, including 15 journal papers, 125 conference papers, and 30 chapters in books were pub-lished. Additionally, more than 250 the-ses were completed, over 160 seminars conducted, and over 55 lectures held. Moreover, over 125 student assistants supported the chair.

- The chair engaged in a project with the local administration of Recklinghausen. Eight students developed a digitalization concept for cemeteries. Moreover, Prof. Dr.-Ing. Hellingrath gave a talk about dig-italization in waste management at the state symposium of NRW.

PUBLICATIONS

Kreuter, T., Kalla, C., Hellingrath, B., Scav-arda, L. F., Thomé, A. M. (2019) Reference Modelling: A Solution for Current Sales and Operations Planning Challenges?, Eu-rOMA, Helsinki

Middelhoff, M., (2019) Process-driven En-terprise Security Modelling for Logistics Service Providers, in: Sicherheitslagen und Sicherheitstechnologien. Beiträge der ersten Sommerakademie der zivilen Si-cherheitsforschung 2018. LIT-Verlag, Berlin

Wesendrup K., Rupp, N., Widera, A., Hell-ingrath, B. (2019) Data Management for Fire Fighting: Challenges and Trends of Data Management for Firefighting in Ger-many and the Netherlands. ISCRAM.

Widera, A., Bubbich, C., Hellingrath, B. (2019) Visualizing Humanitarian Logistics Performance: Design, Application and Evaluation of an IT-supported Balanced Scorecard Approach. In: International Jour-nal of Information Systems for Crisis Re-sponse and Management, Vol. 11 (1).

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UNIVERSITY OF MÜNSTER – INSTITUTE FOR INFORMATION, TELECOMMUNICATION AND MEDIA LAW (ITM) – CIVIL LAW DEPARTMENT

itm

ABOUT THE INSTITUTION

The ITM is the leading Institute for Information, Telecommunication and Media Law in Germany. The Institute's work aims at exploring the legal framework and underlying policies of the information society with a particular focus on "information" as an economic and cultural good. The Institute emphasizes the importance of interdisciplinary work since a proper understanding of technological or economic backgrounds is a prerequisite for successful regulation. Many activities are carried out in close cooperation with other institutes of the University of Münster. In 2002, the ITM was appointed the Competence Centre in Information, Telecommunication and Media Law for North Rhine-Westphalia.

Dr. Thomas Hoeren is a professor of civil law at the University of Münster and has been the director of the ITM since 1997. Due to international projects, such as TIM-BUS, Prof. Hoeren has become recognized as a specialist in Information Law throughout Europe.

RESEARCH TOPICS

Our research focuses on Information Law, Telecommunication Law and Media Law as well as related areas such as Antitrust and Consumer Protection Law. Since this field of research is characterized as a cross-sectional matter, it cannot be fully covered by any of the traditional legal disciplines by itself. The ITM, therefore, strives for interdisciplinary research and teaching activities.

CURRENT RESEARCH PROJECTS

Currently, the ITM is involved in several projects:

Art Law Clinic is a project in cooperation with the Academy of Fine Arts Münster. Its basic idea is: "Law students for art students". Art students can seek help of law students in senior classes to solve basic legal problems, which occur during their academic studies. The service is entirely free and coordinated by employees of the ITM and the Academy of Fine Arts Münster. Additionally, a legal guideline has been provided, giving students an overview of art law. By combining the inherently different but closely connected topics of law and art, the project will increase the interdisciplinary and mutual understanding between the students and their respective subjects.

GOAL (Governance by and from algorithms) is our latest research project on algorithms and AI (kick-off: November 2019). The research investigates how algorithms can perform governance functions and how governance of algorithms can be designed. The aim of GOAL is the identification of governmental, technical and regulative needs and options for action to design comprehensive governance structures. This can contribute to legal and investment security by becoming a building block of the digital economy. In the project network, computer scientists, lawyers, ethicists, behavioral scientists and economists conduct joint interdisciplinary research on technology assessment.

Matters of Law in the German Research Network (DFN): The DFN (Deutsches Forschungsnetz) provides a communication network for universities and research facilities in Germany also connecting with the community of research and education networks worldwide. Increasingly, the DFN-members are facing legal questions regarding liability, telecommunications and data protection. The ITM assists in solving those difficult issues and offers general legal advice to members. We also provide a series of podcasts on our homepage which deal with current topics by giving a short overview.

Regulatory Sandbox Blockchain NRW: The project, which is funded by the state of North Rhine-Westphalia, was launched in September 2019. Its aim is to test and develop practical implementations of blockchain technology in different economic sectors. To achieve this, the Regulatory Sandbox will allow cooperation between researchers from diverse scientific fields and businesses as well as start-ups. The ITM lends its support to the Fraunhofer Institute for Applied Information Technology FIT by providing the legal perspective.

Research Center for Industrial Property Rights: The ITM also hosts the Research Center for Industrial Property Rights, which offers training and conducts research activities in the field of industrial property rights, trying to connect science and economics. The Research Center is supported by an association of companies, lawyers, and patent attorneys.

FINISHED RESEARCH PROJECTS

The following projects have been finished in 2019:

ABIDA (Assessing Big Data) was an interdisciplinary research cluster funded by the Federal Ministry of Education and Research (BMBF) focusing on social, legal, political, ethical and economic research with regard to Big Data. The project was managed by the ITM and the Institute for Technology Assessment and System Analysis in Karlsruhe (ITAS). Furthermore, the Berlin Social Science Center (WZB), the Technical University Dortmund, the Ludwig-Maximilians-University Munich as well as the University of Hannover were project partners. The project aimed at monitoring and assessing current developments regarding Big Data, taking into account public opinion and bringing together expert knowledge. Several research groups and external researchers worked on interdisciplinary in-depth studies, which were assessed in expert workshops and a national symposium. Moreover, three citizens' conferences and a representative opinion survey have been carried out to ensure an extensive involvement of the public. On this basis, all relevant issues have been analyzed and evaluated to provide options for political decisions, further research and economic approaches, also pointing out alternatives. Initiated in March 2015, the project ended successfully in May 2019.

RWTÜV Foundation Assistant Professorship of IT Law: This professorship promoted young researchers in the field of IT law. Prof. Dr. Nikolas Guggenberger, LL.M. (Stanford) held this position from fall of 2016 until September 2019. His research focused on law and innovation, specifically on the implications of blockchain technology, smart contracts and the automation of law. As the newly appointed Executive Director of the Information Society Project at Yale University, he will maintain a position as an external lecturer.

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DISSERTATIONS/HABILITATIONS

Markus Andrees (2019): Außervertragliche Haftung bei mangelhafter IT-Sicherheit – Legislative Handlungsoptionen zur Verbesserung des IT-Sicherheitsniveaus von Produkten und Diensten.

Timm Düwel (2019): Zensururheberrecht? – Urheberrechtliche Grenzen der Informations- und Pressefreiheit bei der Veröffentlichung geheimer staatlicher Dokumente.

Anna Sophie Heuchemer (2019): Folgenbeseitigung im Äußerungsrecht.

Tim Hey (2019): Die außervertragliche Haftung des Herstellers autonomer Fahrzeuge bei Unfällen im Straßenverkehr.

Franziska Leinemann (2019): Daten als Entgelt – Eine andere Gegenleistung als Geld in Form personenbezogener Daten.

Robert Ortner (2019): Medizin-Apps als Medizinprodukt: Regulierung eines Risikoprodukts.

Sebastian Schmolck (2019): Rechtliche Rahmenbedingungen für einen verantwortlichen Umgang mit Softwareschwachstellen und Exploits.

Max von Schönfeld (2018): Screen Scraping und Informationsfreiheit.

Lennart Sydow (2019): Spannungsverhältnis zwischen Pre-Trial Discovery und Datenschutzrecht.

UNIVERSITY OF MÜNSTER – CHAIR FOR IS AND INTERORGANIZATIONAL SYSTEMS

Interorganizational Systems Group

ABOUT THE INSTITUTION

Our research explores the impact of information and communication infrastructures in an organizational context. We are interested in the development of the digital organization: how do organizations and leaders respond to the challenges and opportunities of an informated society and economy? We study new modes of organizing, coordination and collaboration from the micro level of work practices, to the meso level of group practices, and the macro level of infrastructure development.

We aim to understand the dynamics of transformation in a historical, societal, regulatory, and economic context. Our work is theoretically and empirically grounded, we employ multiple methods and research approaches with an emphasis on qualitative, interpretative approaches.

It is our research philosophy that the implications of innovative ICT become visible and understandable in the context of (communities of) practices. In order to study practices in situ, we advocate approaches, which facilitate research and experimentation in complex real world settings, addressing business or societal innovation. Typically multiple stakeholders and researchers from different disciplinary backgrounds are involved.

RESEARCH TOPICS

We pursue this agenda through three, interrelated fields of research:

1. The Communication & Collaboration Management group, led by Dr. Simeon Vidolov, is broadly concerned with understanding the role of technologies, knowledge and collaborative processes, both within and between organizations and broader social networks. The principal aim of the group is to promote the critical study of communication, co-

ordination and collaboration practices that are seen as central to the relationship between technology, organizational, and societal changes. A prominent focus in our research is the examination of the material and affective aspects of organisational and social life, and the practices through which they are being mediated and performed. Some of our research themes include:

- Virtual and distributed forms of working and organizing,
- Collaborative practices and trust production in complex network arrangements,
- Role of affectivity and embodiment in process of learning and collaboration,
- Critical approaches to project management, and its performativity and politics,
- Enterprise social networks and workplace analytics

2. The Research Group on Strategic Information Management (RG SIM), led by Dr. Alexander Teubner, does research on the management challenges that executives with information technology responsibility face in the Digital Age. The following challenges are in the focus of the group's currently research:

- IT/IS Strategies for the Digital Age: Which issues should top-managers consider when devising IT strategies? How to devise IT/IS strategies and how to align them with business strategies?
- Digital Transformation and Techno-change: How to align changes of the IT-based infrastructure with organizational change? How to plan, control and coordinate large, complex and risky IT endeavours comprising a larger set of interrelated IT projects?
- IT/IS Investment Evaluation and Control: What kind of IT investments should digital organizations make? How to decide on IT-investment alter-

natives? What is the business value of IT investments? How to control the IT/IS investment portfolio for value delivery?

- IT Outsourcing and Organization: Which IT tasks can and should be outsourced and what are appropriate sourcing modes (offshoring vs. nearshoring, single vs. multi-vendor sourcing)? Alternatively, how to best organize the in-house IT/IS function in digital organizations?

3. The Interorganizational Systems group studies the development and transformation of interorganizational information infrastructures and related theoretical as well methodological questions. Specifically we study

- how to facilitate collective action in heterogeneous actor constellations or coalitions,
- how governance models, including multi-sided platforms, ecosystems, commons-based peer production, blockchain governance, emerge in digital environments,
- how industry structures, specifically structures of intermediation, are transformed alongside the proliferation of ICT.

We study these issues specifically in the context of the health care sector, travel & tourism and the academic publishing industry.

CURRENT RESEARCH PROJECTS

IT/IS Strategy in the Digital Age
(Dr. J. Stockhinger, Dr. A. Teubner)

Digitalization has fundamentally transformed the business world and put into question traditional strategy wisdom. Given that IT is the fundamental driver behind this transformation, new strategic management challenges do not only emerge in the business realm but even more so in the IT/IS domain. To prosper in the digital age,

it is imperative for C-level IT executives to have a clear overview over the peculiarities that digitalization brings about. This knowledge then allows them to weigh on the implications for the planning domains at the heart of IT/IS strategy: the corporate IT/IS infrastructure and the IT/IS function. Consequently, our research aims at clarifying what is meant by IT/IS strategy in the digital age, what critical issues it should address and how IT/IS strategies relate to the emerging concept of "digital strategy".

From artifact to infra structura – The prescription as intellectual and material vantage point to the design of social infrastructure (Dr. S. Schellhammer, WWU, Dr. M. Avci, RWTH)

IS scholars from RWTH Aachen and WWU Münster will work with pharmaceutical historians from the Philipps University of Marburg and the German Pharmacy Museum in Heidelberg to investigate the formation and development of a cornerstone of today's healthcare system – the drug prescription. It will create one of the largest digital collections of prescriptions from the early modern period to modern times in German-speaking countries. The Federal Ministry of Education and Research will support this project over the next 4 years with a volume of approximately 1 million Euro.

Interorganizational Ambidexterity (Prof. D. Vieru, TELUC University, Montréal, Prof. S. Klein)

We study, how companies use interorganizational collaboration in order to efficiently balance exploration and exploitation and extend their ambidexterous capabilities in the context of small and medium size IT service providers.

Preliminary findings demonstrate diverse practices of how these companies combine the pressure to report billable hours and maintain a culture of innovation and learning. Project debriefings and cross-project learning are key mechanisms to achieve ambidexterity. Innovations driven by the IT vendors are carefully scrutinized and assessed with respect to the relevance

for the customer segments and the appropriate timing for market entry and roll-out. Prof. Vieru was the recipient of a DAAD fellowship for visiting professors and spent 3 months in Muenster.

Blockchain as Organizational Technology (Prof. S. Klein, in collaboration with UCD and Uni Zurich)

The project explores governance modes of permissioned blockchain initiatives and associations.

Development of Digital Platforms in Health Care (Prof. S. Klein, in collaboration with FU Berlin)

The project studies examples of digital platforms in health care, their network configurations, value propositions and operating logics and their dynamics over time.

Surveillance Capitalism in Academic Publishing (Dr. S. Vidolov, Prof. S. Klein plus collaborators)

The project examines the transformation of academic publishing at the intersection of the managerialist turn in academia and the morphing of leading publishing houses into information analytics companies, aiming to become the information infrastructure for academia.

SELECTED PUBLICATIONS

Fürstenau, D., Auschra, C., Klein, S., & Gersch, M. (2018). A process perspective on platform design and management: evidence from a digital platform in health care. Electronic Markets - The International Journal on Networked Business, 20(2), 161.

Miscione, G., Klein, S., Schwabe, G., Goerke, T. M., & Ziolkowski, R. (2019). Hanseatic Governance: Understanding Blockchain as Organizational Technology. In ICIS 2019 Proceedings.

Stockhinger, J. (2019). Information Systems Strategy in the Digital Age. Dissertation, Münster, Germany, 196 pp.

Stockhinger, J., & Teubner, R. (2018). How Management Consultancies Make Sense

of Digital Strategy. In Pries-Heje, J., Ram, S., & Rosemann, M. (Eds.). In ICIS 2019 Proceedings.

Teubner, R. A. (2019). An Exploration into IT Programs and their Management. Findings from Multiple Case Study Research. Information Systems Management, 36(1), 40–56.

Watson-Manheim, M. B., & Klein, S. (2019). Conceptualizing Hidden Human Work in a Technology Intensive Work Environment. In OCIS 2019: Change Management, AI and Social Media.

Wohlhage, S. (2019). AACSB-accreditation of a German school of business: A sense-making perspective. Schriftenreihe Lehre et Forschung: Band 30. Hamburg: Verlag Dr. Kovač.

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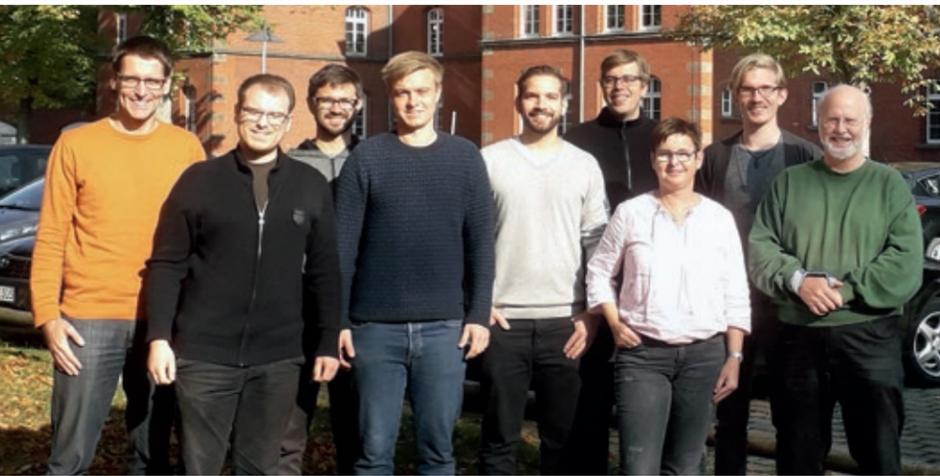Leonardo-Campus 11
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UNIVERSITY OF MÜNSTER –
CHAIR OF PRACTICAL COMPUTER SCIENCE

ABOUT THE INSTITUTION

Prof. Dr. Herbert Kuchen is leading the Practical Computer Science group since 1997. He is teaching in the area of Software Engineering, Programming Languages, and Programming. Maintaining close collaborations with several local companies, his group is offering students the chance to write bachelor and master theses with high practical relevance.

RESEARCH TOPICS

The research of the group focuses on selected aspects of Software Engineering. Fields of research are Business Apps, Model-Driven Software Development, Domain-Specific Languages, Testing, the Integration of Programming Paradigms, Parallel and Distributed Programming, Swarm Intelligence, and E-Assessment.

CURRENT RESEARCH PROJECTS

We have extended our model-driven approach to the development of business apps towards novel app-enabled devices such as smartwatches (for the Wear OS platform). In addition, the Muenster App Modeling Language (MAML) empowers non-technical users to model apps using a visual notation in a process-oriented fashion. In cooperation with the University of São Paulo, current research also focuses on the challenges of accessibility in mobile apps and aims to provide solutions for developers with little expertise in accessible software by applying model-driven techniques.

Another research field is the automatic generation of test cases based on the symbolic execution of Java bytecode. In particular, we have extended the Muenster generator of glass-box test cases (Muggl) such that it now also reaches control-flow coverage in the presence of accessed databases and web services. Moreover, we have developed a tool that automatically generates test cases for the user interface of JSF-based web applications. We have also developed an approach that runs large JUnit test suites in a distributed environment, reducing the overall execution time.

The domain-specific language Musket has been developed for parallel programming on a high level of abstraction. It can be used to overcome the difficulties of low-level frameworks such as MPI, OpenMP and CUDA. Musket provides so-called algorithmic skeletons which are abstractions of typical patterns for parallel programming. Musket programmes are automatically transformed to optimised C++ programmes for a variety of parallel architectures ranging from clusters and multicores to GPUs.

With the Muenster logic-imperative language (Muli) we are continuing our work on a novel programming language for constraint-logic object-oriented programming. Current work focuses on creating a reliable structure for the runtime environment and on facilitating the use of objects as logic variables in arithmetic and boolean expressions.

Our research on e-assessment focuses on a web-based tool for UML class diagrams. We have developed an algorithm for the automatic identification of design patterns within students' solutions. The results can be leveraged to create customised feedback for students, which aims to teach the correct choice and application of design patterns. Lately, we applied swarm-intelligent algorithms as a parameter optimisation for the identification algorithm. The goal was to improve the identification quality towards the quality of the teaching staff.

Another field of research is machine learning in an interdisciplinary context. Our focus is on improving predictions by means of preprocessing optimised for the problem at hand. In addition, we are developing an easy-to-use tool to enable our cooperation partners to use the newly developed machine learning pipeline for their research, without any great understanding of computer science. We are currently working with organic chemistry to improve the prediction of high-throughput experiments.

EVENTS

On May 14 and on November 5, the Jobhub IT, the IT job fair of the University of Münster, has been organised in the Aula of the University with 20 participating companies from the Muensterland region.

On November 28, the annual awards ceremony for the best thesis in applied computer science has been organised at the Chamber of Industry and Commerce of North Westphalia.

Herbert Kuchen served as programme chair of the 27th International Workshop on Functional and Logic Programming in Cottbus, Germany, September 9–13.

PUBLICATIONS

Abreu, S., Hofstedt, P., John, U., Kuchen, H., Seipel, D. (2019, Eds.) Pre-proceedings of the International Conference DECLARE (DECLARE 2019). CoRR abs/1909.04870.

Beyer, L., Dageförde, J. C., Kuchen, H., & Usener, C. (2019). Automated Data-flow Analysis and Validation in Process Automation Projects. In Proceedings of the 18th International Conference on Intelligent Software Methodologies, Tools, and Techniques, Kuching, Malaysia.

Bünder, H., & Kuchen, H. (2019). A Model-Driven Approach for Behavior-Driven GUI Testing. In Proceedings of the 34th ACM/SIGAPP Symposium on Applied Computing (SAC '19), Limassol, Cyprus, 1742–1751.

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Kuchen, H. (2019). Parallel Programming with Algorithmic Skeletons. The Art of Structuring, 527-536, Springer Verlag.

Menezes, B., Amorim, H., Kuchen, H., Buarque, F. (2019). Parallelization Strategies for GPU-Based Ant Colony Optimization Solving the Traveling Salesman Problem, In Proceedings of the IEEE Congress on Evolutionary Computation (CEC), 3094-3101.

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Rieger, C., & Kuchen, H. (2019). A Model-Driven Cross-Platform App Development Process for Heterogeneous Device Classes. In Proceedings of the 52nd Hawaii International Conference on System Sciences, Maui, Hawaii, USA, 7431–7440.

Rieger, C., Wrede, F., & Kuchen, H. (2019). Musket: A Domain-Specific Language for High-Level Parallel Programming with Algorithmic Skeletons. In Proceedings of the 34nd Annual ACM Symposium on Applied Computing (SAC), Limassol, Cyprus, 1534–1543.

Rieger, C., & Kuchen, H. (2019). Towards Pluri-Platform Development: Evaluating a Graphical Model-Driven Approach to App Development Across Device Classes. In Majchrzak, T. A., Mateos, C., Poggi, F., & Grønli, T.-M. (Eds.), Towards Integrated Web, Mobile, and IoT Technology (pp. 36–66). Lecture Notes in Business Information Processing: Vol. 347. Cham: Springer International Publishing.

Rieger, C., & Majchrzak, T. (2019). Towards the definitive evaluation framework for cross-platform app development approaches. Journal of Systems and Software, 153, 175–199.

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Schneid, K., Thöne, S., Kuchen, H., Usener, C. A., & Tophinke, C. (2019). Static Analysis of BPMN-Based Process-Driven Applications. In Proceedings of 34th ACM/SIGAPP Symposium on Applied Computing (SAC), Limassol, Zypern.

Wrede, F., Rieger, C., & Kuchen, H. (2019). Generation of high-performance code based on a domain-specific language for algorithmic skeletons. The Journal of Supercomputing, 75, 1–19.

DISSERTATIONS

Christoph Rieger: Model-Driven Software Development – Cross-PlatformApp Development and Further Applications of Domain-Specific Languages.

Andreas Fuchs: Automated Test-Case Generation with Symbolic Execution.

UNIVERSITY OF MÜNSTER – INFORMATION SYSTEMS AND STATISTICS

WIRTSCHAFTS INFORMATIK & STATISTIK

ABOUT THE INSTITUTION

Heike Trautmann is head of the Information Systems and Statistics group as well as a director of ERCIS. Together with Christian Grimme she leads the ERCIS Competence Center "Social Media Analytics". Currently, she is also Vice Dean for Internationalisation at the Münster School of Business and Economics. Her team contributes to the research areas of Data Science and Big Data, Artificial Intelligence, Social Media Analytics, (Multi-Objective) Optimisation, Evolutionary Computation as well as Automated Algorithm Selection and Configuration in international and industrial collaborations.

RESEARCH TOPICS

Some of the most challenging real-world problems involve the systematic and simultaneous optimisation of multiple conflicting objectives. As most of those Multi-Objective Optimisation problems cannot be solved exactly, we apply optimisation techniques from Evolutionary Computation to approximate optimal compromises.

In the context of Algorithm Benchmarking, the group evaluates the performance of nature-inspired techniques and contributes to algorithm design from an empirical as well as a theoretical perspective. Algorithm Selection deals with the selection of the best suited algorithm for a given problem in an automated fashion. Methodologically, identified problem properties are matched to known algorithms' performance (Exploratory Landscape Analysis). Artificial Intelligence and machine learning learning techniques, in particular deep learning and classification approaches, play a fundamental role in constructing accurate and efficient selection models. Together with the Configuration and Selection of Algorithms (COSEAL) research group, the team is strongly involved in this area focusing on vehicle routing and continuous optimisation.

Moreover, the group is highly interested in designing automated algorithm configuration and selection strategies operating on data streams. Matthias Carnein successfully initiated a respective collaboration with experts of the University of Waikato, New Zealand, during a research stay funded by the EU-project RISE_BPM *(https://www.rise-bpm.eu)*. In general, the group addresses Data Science issues related to Big Data applications such as omni-channel customer relationship management, specifically customer segmentation (ERCIS Omni-Channel Lab powered by Arvato), or propaganda and disinformation detection in online media (Projects PropStop and Moderat!, Competence Center Social Media Analytics).

CURRENT RESEARCH PROJECTS

DemoRESILdigital *(www.demoresildigital.uni-muenster.de)*: "Democratic resilience in times of online-propaganda, fake news, fear- and hate speech". This junior research group is supported by the Digital Society research programme funded by the Ministry of Culture and Science of the German State of North Rhine-Westphalia and associated with the Department of Communication at WWU Münster and the Information Systems and Statistics Group.

Moderat! *(https://www.moderat.nrw)* The project aims to use an integrative and interdisciplinary approach to develop software tools and a web platform that will enable operators to moderate web debates with significantly small effort. Comments will be analysed automatically, so that only a small number of critical comments have to be viewed manually.

PropStop *(www.propstop.de/?lang=en)*, funded by the BMBF), Detection, Analysis and Mitigation of Online Propaganda: The three-year project, which ended this year, is concerned with the detection of propaganda and disinformation attacks in online media.

The ERCIS Omni-Channel Lab - powered by Arvato *(https://omni-channel.ercis.org)* (2016-2019) combines knowledge from research and experience from practice to innovate omni-channel customer relationship management.

The COSEAL (configuration and selection of algorithms) research group *(http://www.coseal.net)* is an international consortium of researchers which addresses current challenges from Algorithm Selection, Algorithm Configuration and Machine Learning. The group strongly supports the joint European initiative CLAIRE (Confederation of Laboratories for Artificial Intelligence Research in Europe, *www.claire-ai.org*) that seeks to strengthen European excellence in AI research and innovation.

AWARDS

Matthias Carnein, Heike Trautmann, Leschek Homann and Gottfried Vossen received the Best Paper Award at CBI 2019 (Conference on Business Informatics) in Moscow for their paper "A Recommender System Based on Omni-Channel Customer Data".

EVENTS

In February, the group organised the 1st Multidisciplinary International Symposium on Disinformation in Open Online Media (MISDOOM) in Hamburg, Germany

In March, the whole group had a 2-day research workshop at "Landhaus Rothenberge".

Genetic and Evolutionary Computation Conference (GECCO 2019): Pascal Kerschke and Mike Preuss (LIACS, Leiden) gave a joint tutorial on "Exploratory Landscape Analysis". Also, they organised workshops on "Understanding Machine Learning Optimisation Problems" and "Game-Benchmark for Evolutionary Algorithms".

In September, Jakob Bossek was invited to the 7th Heidelberg Laureate Forum bringing together the most exceptional mathematicians and computer scientists of their generations.

PUBLICATIONS

Carnein, M., & Trautmann, H. (2019). Optimizing Data Stream Representation: An Extensive Survey on Stream Clustering Algorithms. Business and Information Systems Engineering.

Kerschke, P., Hoos, H. H., Neumann, F., & Trautmann, H. (2019). Automated Algorithm Selection: Survey and Perspectives. Evolutionary Computation Journal.

Kerschke, P., & Trautmann, H. (2019). Automated Algorithm Selection on Continuous Black-Box Problems By Combining Exploratory Landscape Analysis and Machine Learning. Evolutionary Computation Journal.

Bossek, J., Grimme, C., Meisel, S., Rudolph, G., & Trautmann, H. (2019). Bi-Objective Orienteering: Towards a Dynamic Multi-Objective Evolutionary Algorithm. In Proceedings of the 10th International Conference on Evolutionary Multi-Criterion Optimization (EMO), East Lansing, MI, USA.

Carnein, M., Homann, L., Trautmann, H., & Vossen, G. (2019). A Recommender System Based on Omni-Channel Customer Data. In Proceedings of the 21st IEEE Conference on Business Informatics (CBI' 19), Moscow, Russia.

Grimme, C., Kerschke, P., & Trautmann, H. (2019). Multimodality in Multi-Objective Optimization — More Boon than Bane?. In Proceedings of the 10th International Conference on Evolutionary Multi-Criterion Optimization (EMO), East Lansing, MI, USA.

Bossek, J., Grimme, C., & Neumann, F. (2019). On the Benefits of Biased Edge-Exchange Mutation for the Multi-Criteria Spanning Tree Problem. In Proceedings of the Genetic and Evolutionary Computation Conference (GECCO '19), Prague, Czech Republic.

Prager, R. P., Troost, L., Brüggenjürgen, S., Melhart, D., Yannakakis, G., & Preuss, M. (2019). An Experiment on Game Facet Combination. In Proceedings of the IEEE Conference on Games, London.

Adam, L., Frischlich, L., Trautmann, H., & Grimme, C. (2019). Automated Detection of Nostalgic Text in the Context of Societal Pessimism. In Proceedings of the MISDOOM Conference, Hamburg.

Assenmacher, D., Adam, L., Frischlich, L., Trautmann, H., & Grimme, C. (2019). Inside the Tool Set of Automation: Free Social Bot Code Revisited. In Proceedings of the MISDOOM Conference, Hamburg.

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UNIVERSITY OF MÜNSTER – CHAIR OF COMPUTER SCIENCE – DBIS GROUP

DBIS Group
Databases &
Information Systems

ABOUT THE INSTITUTION

Databases and database systems have always been at the heart of information systems. While their visibility has been decreasing in recent years, their importance as a core infrastructure underlying modern IT systems, including those on the Web and in the cloud, has always been growing. This is due to the fact that database systems offer functionality, such as high-level querying or transactional contracts, that is central to many applications, and that they have adapted to the growing requirements regarding availability, scalability, and data modelling. The DBIS Group in the Department of Information Systems at the University of Münster is a member of the European Research Center for Information Systems (ERCIS) and as such studies challenges regarding the adoption, application, exploitation, and usage of data-

bases, data warehouses, and other data management systems in business-oriented domains.

Dr. Gottfried Vossen, Professor of Computer Science and head of the group, is a Fellow of the German Computer Science Society (GI), Honorary Professor at the University of Waikato Management School in Hamilton, New Zealand, and a European Editor-in-Chief of Information Systems, an International Journal. He is chairman of the steering committee of the German information technology certification agency Cert-IT and serves on several editorial boards and program committees.

RESEARCH TOPICS

Research topics currently studied by the DBIS Group include challenges involving data and processes, data warehousing, (social) business process management, gamification in business contexts, Big Data processing and handling, data marketplaces, their pricing and querying, and specific challenges related to digitization and digital transformation. Our approach is based on the conviction that (business) processes and process models are el-

ementary tools for perceiving and analyzing data-driven applications. In order to execute a process, however, appropriate means for managing the data that arises are needed. This data typically comes in high quantities, high frequency, and high variety, and hence requires suitable tools for its processing. This is where we derive our research topics from.

CURRENT RESEARCH PROJECTS
Process Model Transformation with NLP

The application of Natural Language Processing (NLP) and automated model transformation for the evaluation of the semantic quality of process models is a current research topic of the DBIS Group. Ambiguity during the process of modelling is a common challenge rooted, amongst other things, in the diversity of stakeholders involved. To address this problem, the combination of different NLP-techniques to analyze in a process model and corresponding artifacts are combined with model transformation steps to enable the quality assessment of the represented content. Together with an ontology that is generated with the help of positive examples, e.g. previously used models from

a model repository, the evaluation of the represented content in a model can be assessed dynamically based on the context. The provided transparency and feedback about the semantic quality of a model or its description consequently should support communication between stakeholders involved in the modeling process and improve the process model.

Algorithmic Bias in Machine Learning

Automated decision-making has become indispensable in our daily lives. Due to this fact, these decisions should be fair or unbiased. Research about algorithmic bias encounters systematic and repeatable errors in computer systems that create such unfair outcomes. For this reason, algorithmic bias has become one of the hottest topics of Machine Learning and also a new research interest of the DBIS group. The right way to deal with bias, however, is anything but a triviality. Machine Learning tasks usually come with a high degree of complexity, special requirements, and a large number of possible influencing factors. In such a sophisticated setting, it is imperative to take bias management steps to enable consistent AI-based decision-making processes. The DBIS group is particularly interested in the interlinking of business processes and data to analyze suitable starting points for fair AI.

Digitalization of Companies – Digi-Check

Digitalization of companies is a current research effort of the DBIS group. To initiate or drive forward digitalization efforts, the status concerning digitalization, i.e. the digital maturity of the company, must be determined first. Therefore, the DBIS group has developed a maturity model that can capture the current digital maturity level of a company. It includes the three primary dimensions Processes, Data, and Business Modell as well as the four secondary dimensions Connectivity, Interaction, Optimization, and Disruption. Based on these dimensions, we have developed a digitalization check (short Digi-Check) in the form of a questionnaire that consists of statements for each of the dimensions. The user

indicates the degree to which she or he agrees with these statements. In the end, the Digi-Check evaluates the digital maturity and presents the results by using a radar chart that indicates the digital maturity for each dimension. Furthermore, it is possible to vary the weighting of the score in each dimension for the calculation of the overall digital maturity. Our Digi-Check is available online at:
https://d-check.uni-muenster.de

AWARDS

Best Paper Award, 21st IEEE Conference on Business Informatics (CBI) 2019, Moscow, Russia, for "A Recommender System Based on Omni-Channel Customer Data," by M. Carnein, L. Homann, H. Trautmann, G. Vossen.

EVENTS

- Regular meetings of the TDWI Roundtable as well as of the GI Regional Group Münsterland.

- ERCIS Launch Pad, annually in Münster, in 2019 on 27th November.

PUBLICATIONS

M. Carnein, L. Homann, H. Trautmann, G. Vossen: A Recommender System Based on Omni-Channel Customer Data; Proc. 21st IEEE Conference on Business Informatics (CBI) 2019, Moscow, Russia, 65 – 74 (Best Paper Award).

L. Homann, D. Martins, G. Vossen, K. Kraume: Enhancing Traditional Recommender Systems via Social Communities; Vietnam Journal of Computer Science 6, 2019.

M. Jürgens, D. Meisy, D. Möllers, F. Nolte, E. Stork, G. Vossen, C. Werner, H. Winkelmann: Bluetooth Mesh Networks for Indoor Localization; Proc. 20th IEEE International Conference on Mobile Data Management (MDM) 2019, Hong Kong, China, 397 – 402.

J. Lechtenbörger: Emacs-reveal: A software bundle to create OER presentations. Journal of Open Source Education, 2(18), 2019.

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J. Lechtenbörger: Simplifying license attribution for OER with emacs-reveal. Proc. Fachtagung Bildungstechnologien (DELFI 2019), Berlin, S. 205 – 216.

J. Lechtenbörger, G. Vossen: Structuring What You are Doing: 20 Years of Business Process Modelling; in: K. Bergener, M. Räckers, A. Stein (eds.): The Art of Structuring Bridging the Gap Between Information Systems Research and Practice; Springer Nature Switzerland 2019, 227 – 238.

D. Martins, J. Lechtenbörger, G. Vossen: Supporting Customers with Limited Budget in Data Marketplaces; to appear in Proc. 6th IEEE Latin American Conference on Computational Intelligence (LA-CCI) 2019.

VIENNA UNIVERSITY OF ECONOMICS AND BUSINESS – DEPARTMENT OF INFORMATION SYSTEMS AND OPERATIONS MANAGEMENT

WIRTSCHAFTS UNIVERSITÄT WIEN VIENNA UNIVERSITY OF ECONOMICS AND BUSINESS

ABOUT THE INSTITUTION

Vienna University of Economics and Business (WU Vienna) is reportedly the biggest business school campus in Europe. The Department of Information Systems and Operations at WU Vienna was founded in the course of WU's organizational restructuring in 2005. Since then, it has consolidated the know-how and reputation of five highly renowned institutes and 16 professors with distinguished focuses in research and teaching, providing a broad representation of IS research topics. Our Bachelor's Program in Information Systems is recognized as Austria's leading degree programs in this field (according to Format Uni-Ranking, 2009).

The established Master's Program in Information Systems ambitiously attempts to follow in these successful steps. It provides students with IT-related knowledge and skills with a particular emphasis on management and research topics. It is a well-balanced mix of theory and practice and the inclusion of state-of-the-art research findings give graduates the tools they need to question standard practices and develop innovative solutions. The Master in In-

formation Systems was designed together with a board of leading Austrian stakeholders from industry and government to meet today's challenges and to provide a solid basis for tomorrow's demands.

RESEARCH TOPICS

The department of Information Systems & Operations consists of five institutes. The Institute for Information Business conducts research in the area of business- and technology-driven innovations with a specific focus on business process management, data management, and knowledge management. The Institute for Information Management and Control's focus is on responding to the needs of organizations and societies in regard to information and technology management, especially considering accountability. The research areas of the Institute for Information Systems and New Media emphasize two major areas: new media, in particular computational media, active media, polymorphic media, and Information systems, in particular highly flexible systems and application engineering. The Institute of Management Information Systems aspires to use a wide range of methods to contribute to the development of sustainable technology aspects. The institute's aim is to be a think tank for business and society that focuses on the sustainable design of information technology. The Institute for Production Management concentrates on research in the area of supply-chain management.

CURRENT RESEARCH PROJECTS

The FFG project AI@work, a project to investigate Human Centered AI in Digitized Working Environments and work out a roadmap for tackling the acceptance and awareness gap of artificial intelligence (AI) in digitized working environments, has started in the beginning of October. The project is lead by Software Competence Center Hagenberg (SCCH), with JKU Linz, PROFACTOR), apollo.ai, Plattform Industrie 4.0 and WU Vienna as partners.

The EU project Knowledge Graphs at Scale (KnowGraphs), an international Training Network (ITN) with the common research goal to scale knowledge graphs technologies to be accessible to a wide audience of (1) companies of all sizes and (2) end users across their professional and private life by using a multi-disciplinary and multisectorial approach, has started in October 2019. The project is coordinated by University of Paderborn, with WU being one of overall international 7 partners.

The Erasmus+ project "Reference Module Design for Explorative Business Process Management" is a joint collaboration together with the University of Liechtenstein (project coordinator) and the University of Bayreuth. It aims to investigate the innovation potential of business process management and targets to transfer the latest research outputs back into education as input for teaching. The project has started in December 2018 and has a duration of two years.

AWARDS

Svitlana Vakulenko and her colleagues received the Best User Paper Award of the 41st European Conference on Information Retrieval (ECIR 2019) with the paper: Svitlana Vakulenko, Kate Revoredo, Claudio Di Ciccio, Maarten de Rijke: "QRFA: A Data-Driven Model of Information-Seeking Dialogues"

Monika Malinova Mandelburger received the Best Reviewer Award of the BPM conference 2019 together with Søren Debois, and Jorge Munoz-Gama.

EVENTS

This year's Austrian Computer Science Day (ACSD) took place on 3 June 2019 at WU Vienna, organized by Axel Polleres (https://acsd2019.ai.wu.ac.at). The ACSD is an annual assembly that brings together computer scientists across Austria and beyond to improve visibility of the field and foster collaboration in research and teaching. This year's ACSD ran under the slogan "Business meets Computer Science". The highlights of the event were a keynote given by the rector of WU Vienna, Prof. Edeltraud Hanappi-Egger, a panel discussion on the role of research in the field of Artificial Intelligence in Austria, and a "Young Experts" session where a selection of PhD students were invited to present their work.

SELECTED PUBLICATIONS

Florian Fahrenbach, Kate Revoredo, and Flavia Maria Santoro (2019). "Valuing Prior Learning: Designing an ICT Artifact to Assess Professional Competences Through Text Mining", European Journal of Training and Development, in press.

Javier D. Fernandez, Marta Sabou, Sabrina Kirran, Elmar Kiesling, Fajar J. Ekaputra, Amr Azzam, Rigo Wenning (2019). "User Consent Modeling for Ensuring Transparency and Compliance in Smart Cities", The Personal and Ubiquitous Computing Journal, in press.

Steven Gross, Monika Malinova, and Jan Mendling (2019). "Navigating Through the Maze of Business Process Change Methods", Proceedings of the 52nd Hawaii International Conference on System Sciences.

Sabrina Kirrane, Marta Sabou, Javier D. Fernández, Francesco Osborne, Cécile Robin, Paul Buitelaar, Enrico Motta, and Axel Polleres (2019). "A decade of Semantic Web research through the lenses of a mixed methods approach", The Semantic Web Journal, in press.

Everist Limaj and Edward Bernroider (2019). "The roles of absorptive capacity and cultural balance for exploratory and exploitative innovation in SMEs", Journal of Business Research, 94:137-153.

Sebastian Neumaier and Axel Polleres (2019). "Enabling Spatio-Temporal Search

in Open Data", Journal of Web Semantics, 55:21-36.

Pnina Soffer, Annika Hinze, Agnes Koschmider, Holger Ziekow, Claudio Di Ciccio, Boris Koldehofe, Oliver Kopp, Hans-Arno Jacobsen, Jan Sürmeli, and Wei Song (2019). "From event streams to process models and back: Challenges and opportunities", Inf. Syst., 81:181-200.

Bastian Wurm, Kanika Goel, Wasana Bandara, and Michael Rosemann (2019). "Design Patterns for Business Process Individualization", 17th International Conference on Business Process Management.

Anton Yeshchenko, Claudio Di Ciccio, Jan Mendling, and Artem Polyvyanyy (2019). "Comprehensive Process Drift Detection with Visual Analytics", ER, in press.

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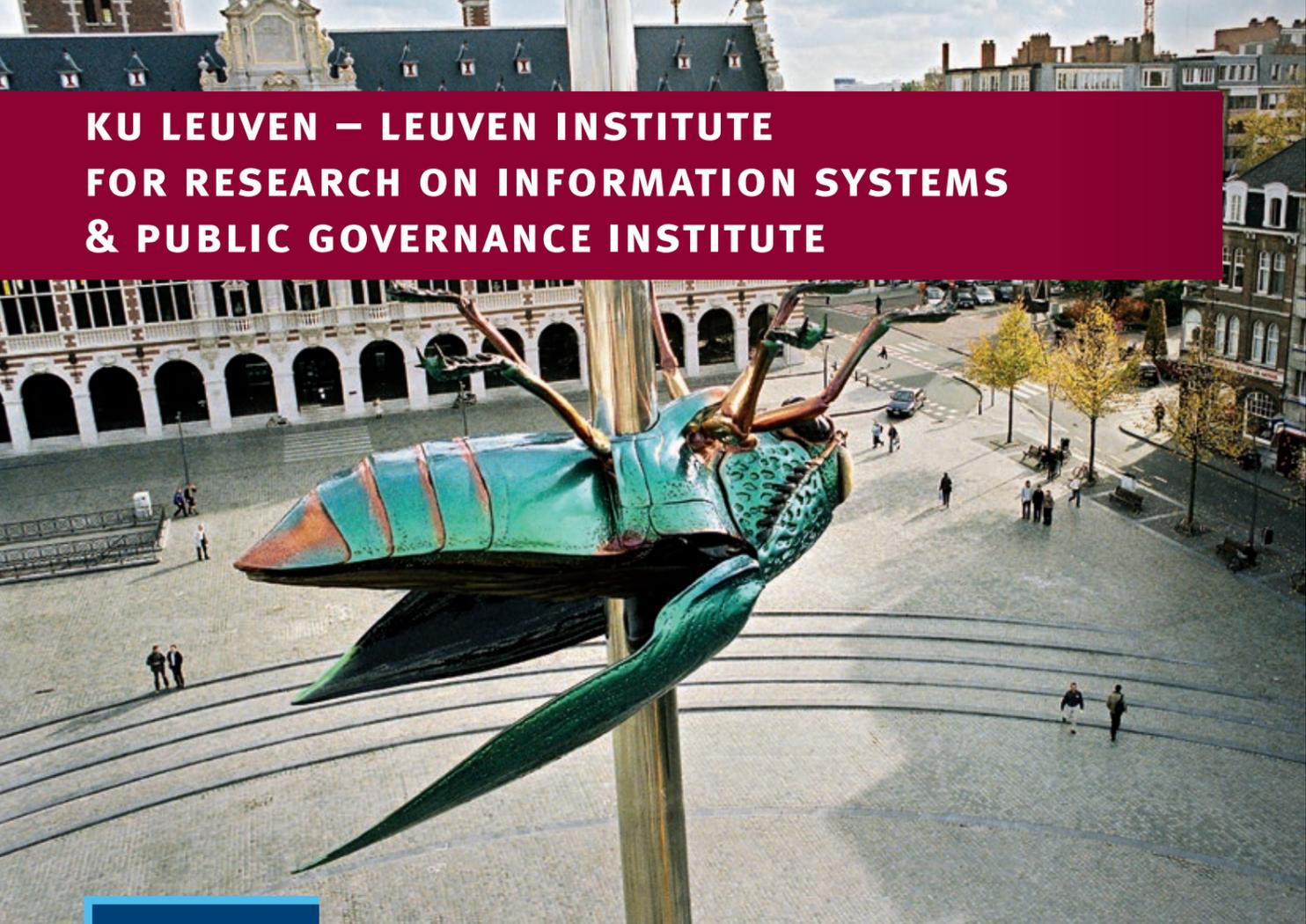p + 43 1 31336 5215
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KU LEUVEN – LEUVEN INSTITUTE FOR RESEARCH ON INFORMATION SYSTEMS & PUBLIC GOVERNANCE INSTITUTE

KU LEUVEN

ABOUT KU LEUVEN

Situated in Belgium, in the heart of Western Europe, KU Leuven has been a centre of learning for nearly six centuries. Today, it is Belgium's largest university and, founded in 1425, one of the oldest and most renowned universities in Europe. KU Leuven is a research-intensive, internationally oriented university that carries out both fundamental and applied research. It is strongly inter- and multidisciplinary in focus and strives for international excellence.

Following the integration of the university colleges, the 'entire' KU Leuven counted 57,286 students as of February 2018. The largest student populations are found in the faculties of Economics and Business, Medicine, Engineering Technology, Arts, and Law. Students from approximately 163 countries study at KU Leuven.

LIRIS

The Leuven Institute for Research in Information Systems (LIRIS), founded in 1987, coordinates research in the area of information technology and management in organizations. This research embodies: fundamental issues of information systems in organizations, applied research, and research on the use and implications of information systems throughout society. The LIRIS Faculty currently counts 7 professors, 2 postdocs and around 15 PhD researchers.

PUBLIC GOVERNANCE INSTITUTE

The KU Leuven Public Governance Institute has the mission to gain knowledge and insight regarding politics, administration and public policies on local, regional, federal, european, and international levels. We intend to make scientific contributions to an improvement in the policy-making, organization and management of public administrations.

The KU Leuven Public Governance Institute is an internationally oriented and interdisciplinary research institute that focuses on different aspects of public governance. Both fundamental and applied research are part of our activities with special attention to theory, empirical research and practice. Comparative research in particular is one of our core competencies.

RESEARCH TOPICS

The research focuses on the entire trajectory of assessing the as-is business situation through (discovery, analysis, mining), modelling the concepts, improving the model to obtain the to-be situation, and engineering the model to an implementation. This integrated approach of models, rules, decisions, processes, and structures aims at creating innovative business solutions and is referred to as Business Engineering. It combines knowledge from the fields of business administration as well as information technology and relates it to the transformation from the industrial society into an information society, where creation, integration, processing, management and use of information and knowledge is a significant economic activity.

Important research topics of LIRIS are:

- analysis, modelling and architecture of information systems;

- knowledge discovery, data and process mining;

- architecture and infrastructure;

- data, process and decision modelling;

- business data, process, service, rules and decision management;

- information strategy.

Public Governance Institute focuses on three distinguishable but partly overlapping clusters within the public governance domain:

Politics, citizens and policies: this research cluster focuses on the understanding of the relationship between governments, citizens and policy practices.

Administrative organization and HRM: this cluster focuses on the changes in the governmental landscape and the way in which the government handles its human capital.

Management of information, performance and finance: this cluster focuses on research about methods and approaches to manage, use and exchange information by governments in the policy, management and financial cycles. This may be within as well as between administrative organizations, but also across and between governments.

CURRENT RESEARCH PROJECTS

Research projects within LIRIS are conducted in four major areas:

Engineering information solutions

Engineering information solutions, dealing with conceptual modelling, data quality and requirements management is a first important area. It allows creating innovative solutions based on sound modelling principles and aligned with the business.

- KBC Research Chair, A Data Quality Framework for Effective Risk Data Aggregation and Risk Reporting (2015–2019).

Business processes intelligence

A second important area is business processes intelligence. This includes some important new contributions to the theory of process analytics and discovery, and applies process analytics to some specific new domains (auditing, learning, service, customers and administrative processes), giving rise to auditing analytics, e-learning analytics, service analytics, etc.

- New techniques in Process Analytics (2015–2019).

Business decision management

Business decision management (modelling, mining and implementing decision representations and business rules) is an area with a long tradition in LIRIS. The research recently led to an industry standard, DMN (Decision Model & Notation), adopted by the OMG.

- TETRA (Technology Transfer) project, Decision Analytics (2017–2019).

Business Analytics & Data Science

In close collaboration with a world-wide network of companies and fellow researchers, we study various research topics within the field of data science. Another key research track concerns the development of social network based analytical models for fraud detection, credit risk modelling and marketing analytics (e.g. churn prediction).

- Fund for Scientific Research – Flanders (F.W.O.-Vlaanderen), Profit-driven Analytics: new techniques and applications (2017–2020).

Recent research projects of Public Governance Institute are:

- A Digital Flemish Government (DigiVO) – Policy Research Centre Innovative Governance of the Flemish government (2016–2020).

- FLEXPUB – Next generation of flexible public services – the geospatial case (BELSPO – BRAIN)(2016–2020).

- its4land Geospatial technology innovations for land tenure security in East-Africa (Ethiopia, Kenya, Rwanda) EU Horizon 2020, ICT-39-2015, (2016–2020).

- Governance for effective Spatial Data Infrastructures (NWO)(2015–2018).

- Terra Mosana, Interreg V Euregion Meuse – Rhine, Belgium, Germany, The Netherlands (2018–2021).

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KU LEUVEN – LEUVEN INSTITUTE FOR RESEARCH ON INFORMATION SYSTEMS & PUBLIC GOVERNANCE INSTITUTE

KU LEUVEN

LIRIS RESEARCH CHAIRS WITH INDUSTRY

The Business Information Systems group has a long tradition in industry-funded research chairs. This partnership with industry is a strong valorization of the research efforts and a good source of relevant research questions. Some current research chairs in business processes, decisions and information management:

ING Research Chair:
Applying deep learning on metadata as a competitive accelerator.

Brussels Airport Chair:
Smart airport operational analytics.

Belfius Research Chair:
Analytics-based selling.

EDUCATION

Erasmus+: Higher Education Joint Master Degrees – Master of Science in Public Sector Innovation and eGovernance together with Westfälische Wilhelms-Universität Münster – University of Münster and Tallinn University of Technology

BESTSDI – Western Balkans Academic Education Evolution and Professional's Sustainable Training for Spatial Data Infrastructures. Erasmus+ Cooperation for innovation and the exchange of good practices

JOURNAL PUBLICATIONS

Hasic, F., Vanthienen, J. (2019). Complexity Metrics for DMN Decision Models. Computer Standards & Interfaces, 65, 15-37.

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De Smedt, J., Deeva, G., De Weerdt, J. (2019). Mining Behavioral Sequence Constraints for Classification. IEEE Transactions On Knowledge And Data Engineering.

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UNIVERSITY OF SÃO PAULO – SCHOOL OF ARTS, SCIENCES AND HUMANITIES

USP

ABOUT THE INSTITUTION

The University of São Paulo (USP), founded in 1934, is the leading institution of higher education and research in Brazil. USP is a free public university with open access to students selected for an entrance exam. USP forms a large part of Brazilian masters and PhDs and alone accounts for over 20% of all national research production, delivering on average almost 50 research papers per day. There are seven university campuses in the state of São Paulo; the main campus is in the city of São Paulo, the state capital. The university has nearly 50 schools and institutes covering all areas of knowledge. There are about 250 undergraduate programs and 250 graduate programs serving almost 100,000 students.

The School of Arts, Sciences and Humanities (EACH), created in 2005, is an interdisciplinary unit of USP that brings together 11 undergraduate and 11 graduate programs in different areas of knowledge. Within these, we act in the Bachelor's in Information Systems undergraduate program, with nearly 40 faculty members, and in the Master of Science and PhD in Information Systems graduate program, with nearly 20 faculty members. Our graduate program in information systems has two broad research lines – "systems management and development" and "systems intelligence" – both with strong appeal in applied computing.

Two other USP units with a strong presence in the information systems and applied computing area are the Institute of Mathematical and Computer Sciences (ICMC), in the campus of São Carlos, with nearly 50 faculty members, and the School of Philosophy, Science and Literature (FFCLRP) with the Department of Computing and Mathematics, in the campus of Ribeirão Preto, with nearly 15 faculty members.

RESEARCH TOPICS

With a total of over 100 researchers in the computing field, USP contributes research in a variety of areas, including some focused specifically on information systems. Some important research topics are: artificial intelligence, big data, bioinformatics, bio-inspired computing, biometrics, business process management, chemistry, complex networks, computational intelligence, computational neuroscience, concurrent programming, databases, distance learning, distributed systems, economics, education, e-government, embedded systems, enterprise environments, functional genomics, games, graphics processing, health, interface human-computer, internet, internet of things, it management, linguistics, machine learning, medical images, mobile devices, mobile robotics, multimedia interactive systems, natural language, pattern recognition, process mining, robotics, serious games, smart toys, social networks, software engineering, systemic biology, and web systems.

CURRENT RESEARCH PROJECTS

Process Mining

The quality of business processes running in organizations is of utmost importance in achieving the organization's strategic goals. This project aims to explore key machine learning and computational intelligence techniques to discover advanced process knowledge for process and organizational improvement. Project conducted at EACH.

Smart Toys and Companion Robots

Smart toys are becoming more attractive to children and their sales may increase considerably soon. This project seeks to propose solutions for both toy makers and privacy regulations to be ready to deal with risks posed to children's privacy when the time comes. Another possible reality soon, companion robots can be used to diagnose depression and anxiety in the elderly in their homes and to propose activities to reduce these states, providing a better quality of life. Project conducted at EACH.

Supporting Children with Down Syndrome

The goal of this project is to develop an intelligent information system to support children with Down Syndrome, through repetitive training, to communicate verbally with greater confidence, fluency and resourcefulness. Based on machine learning and pattern recognition, the system must learn about the children's difficulties and potentials to guide them through the process of speech enhancement in a consistent, interactive, and adaptive manner. Project conducted at FFCLRP.

Mobile and Web Accessibility and Interoperability

Developing applications which are accessible for handicapped users can be difficult, tedious, and error prone. This project aims to create model-driven software development solutions that enable the easy development of accessible web applications and apps for mobile devices. A generator can transform a high-level description of an application into code which ensures the accessibility for all users. Project conducted at ICMC.

Partner – Alessandra Alaniz Macedo (FFCLRP)

Partner – Renata Pontin de Mattos Fortes (ICMC)

PUBLICATIONS

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HIGHLIGHTS

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3rd Symposium on Computing in Companion Robots and Smart Toys, Organized by P. Hung, M. Fantinato, F. Iqbal, J.-H., Morin, at the 52nd Hawaii International Conference on System Sciences (HICSS), 2019.

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CHARLES UNIVERSITY IN PRAGUE – FACULTY OF MATHEMATICS AND PHYSICS – DEPARTMENT OF SOFTWARE ENGINEERING

ABOUT THE INSTITUTION

The natural sciences have been a part of the research teaching at the Charles University since its founding in 1348.

The Faculty of Mathematics and Physics has been created by separating a part of the Faculty of Natural Sciences on 1 September 1952. Now, it is composed of three schools: School of Physics, School of Mathematics, and School of Computer Science.

The School of Computer Science at the Faculty of Mathematics and Physics includes eight prestigious teaching and scientific workplaces. The quality of their graduates is widely recognized. Among them are a number of top experts working as computer program developers and technological innovators. They are as successful as entrepreneurs. Members of the School of Computer Science achieve outstanding scientific results in discrete mathematics, especially in graph theory and its application in intelligent systems, optimization, programming methods, semantics and building large software systems, processing natural language, and many others.

The Department of Software Engineering focusses on research and teaching in the areas of database systems, semantic web, similarity search, Bioinformatics & Cheminformatics, XML technologies, parallel computing, Big Data, and e-Science.

RESEARCH TOPICS

There are three research groups in the department:

SImilarity RETrieval Research Group (SiRet)
http://siret.ms.mff.cuni.cz/

SIRET was founded in 2006 at the Department of Software Engineering, Faculty of Mathematics and Physics, Charles University in Prague. SRG deals with database methods for efficient and effective similarity search in databases of complex unstructured objects. In particular, SRG is interested in three areas – general methods of indexing similarity (metric and non-metric spaces), biological applications of the similarity search, and indexing image databases for content-based retrieval.

XML and Web Engineering Research Group (XRG)
http://www.ksi.mff.cuni.cz/xrg/

The XML and Web Technologies Research Group (XRG) focuses on XML and Web technologies and their exploitation, service-oriented architectures (design, implementation, and management), evolution, change management and adaptability of applications, efficient processing of graph data (XML, RDF, linked data), ontologies, Web 2.0, and semantic web services. Recently, the Big Data, Linked Data, and graph databases research are at the forefront of the group.

Parallel Architectures/Algorithms/Applications Research Group (PARG)
http://www.ksi.mff.cuni.cz/parg/

The Parallel Architectures/Algorithms/Applications Research Group focuses on multi-core CPUs and NUMA servers programming, many-core GPUs and GPGPU computing, utilization of emerging parallel architectures (Intel MIC, Parallela/Epiphany), distributed computing on tightly coupled clusters, parallel data processing, concurrency in database systems, and languages (and compilers) for parallel processing.

CURRENT RESEARCH PROJECTS

The department members are involved in a number of research projects funded by the Czech Science Foundation and the Technology Agency of the Czech Republic. The projects concern three scientific areas: The projects concern three scientific areas: Bioinformatics & Cheminformatics, (e.g., Molpher – Software tool for exploration of the chemical space; P2Rank – Ligand-binding site prediction; P3S – Protein structure similarity search; and others), General indexing (e.g., PGRTree – Plugin for Indexing Multidimensional Data in PostgreSQL using R-tree), and Multimedia (e.g., Find the image – Online tool for comparisons of different multimedia exploration approaches; Multimedia exploration framework – Creation of efficient multimedia exploration applications, user preference analytics in multimedia exploration models; SIR – Smart image retrieval; Web Image Extractor – Image feature signatures extractor demo implemented in web browser; Sketch-based Video Browser (or Video Hunter) – An interactive video retrieval tool for known-item search tasks, and others).

AWARDS

Fourier Prize 2019 – the best research works in computational science were awarded the Fourier Prize in Prague at the end of June. Ladislav Maršík, a Ph.D. student of the Department of Software Engineering, made it to the shortlist and presented the results in his doctoral thesis "Cover Song Identification using Music Harmony Features, Model and Complexity Analysis". His work belongs to the field of Music Information Retrieval.

PUBLICATIONS

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DISSERTATIONS

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COPENHAGEN BUSINESS SCHOOL – DEPARTMENT OF DIGITALIZATION (DIGI)

Copenhagen Business School
HANDELSHØJSKOLEN

ABOUT THE INSTITUTION

The Department of Digitalization (DIGI) is one of the largest IT Management departments in Europe. DIGI is a multi-disciplinary department that embraces theories and methods from the fields of information systems, business administration, computer science, organization studies, political science, economics, sociology, psychology, and communication theory. The mission statement of the department is: Co-creating knowledge with enduring consequences through the study of the interrelationships among people, information and technology.

The Association of Information Systems (AIS) is the core community of the department. The AIS community is inclusive and open to all the current research areas of the department. With our journal contributions to the Senior Scholars' Basket of Journals we are ranked number two in Europe.

Other communities are also relevant, e.g., human-computer interaction, e-government, organization studies, learning sciences, and software design and development.

We strive for a high level of collaboration with representatives from industry and society (also called engaged scholarship) while also organizing our research to accommodate for the fast-moving pace and

radical innovation that characterizes the IS research field. We achieve this by organizing part of our research around themes that address societal or business challenges. The themes are topical, popular, inter-disciplinary and dynamic in nature. In addition to the research themes, DIGI still maintains the more traditional research areas for the disciplinary development of its researchers.

The faculty and administrative staff of the department are primarily teaching within the following degree programs: Bachelor in Business Administration and Information Systems, Bachelor in Information Management, MSc in Business Administration and Information Systems and the MSc in IT (eBusiness).

RESEARCH TOPICS

The Department of Digitalization conducts research within the following research areas related to information technology and information systems: Design, Implementation, Use and exploitation and Information management.

The research at DIGI is organized around a number of cross disciplinary themes and we cover a number of research areas like the sharing economy, future of work, mergers & acquisition, social media, cashless society, internet of things, or open big data.

Themes are emergent, topical, inter-disciplinary and dynamic in nature. They emerge from bottom up activities where researchers find that they share a common excitement about a new phenomenon and

encompass several tenured faculty members who meet regularly about a common research phenomenon over a longer period of time.

Example Research Theme IoT. The group 'Internet of Things' (IoT) has the objective to create an Internet of People and Societies by creating multidisciplinary and cross-disciplinary approaches with researchers, politicians, citizens, NGO's and enterprises pursuing socially productive scenarios in the merging of our physical world and the virtual world.

RECENT PROJECTS

The Consistently Optimized Resilient Global Secure Global Supply Chain (Core) project will consolidate solutions developed in Reference Projects in each supply chain sector (port, container, air, post).Implementation-driven R&D will be then undertaken designed to discover gaps and practical problems and to develop capabilities and solutions that could deliver sizable and sustainable progress in supply chain security across all EU Member States and on a global scale.

Center for Business Data Analytics. The Center for Business Data Analytics(cbsBDA) celebrates its first year at the Department of Digitalization of the Copenhagen Business School. It conducts transdisciplinary basic research at the socio-technical intersections of computer science and social science with specific applications to managers in companies, teachers in schools and residents in cities.

Big Social Data Analytics. CBS DIGI received a 6.2 m DKK grant from the Danish Industry Foundation and starts a research project on big social data analytics. The research project is case based and can, by building new analytical models that collect big data streams from company databases, websites and social media such as Facebook, Instagram, Pinterest, Twitter and LinkedIn, provide companies with necessary algorithmic approaches to address current business challenges.

Cashless Society. The vision behind "Cashless Society' is to make Denmark the first cashless society in the world. Compared with the rest of the world, the Danish based entirely unique, and the cashless society will only further strengthen Denmark's international competitiveness. The idea of a cashless society leads to a number of issues and challenges that will be explored and investigated. Some of the key research questions are: How does the digitization of money affect the use and experience of money? How does the digitization of transactions influence the performance of and preference for different payment systems? How can we design a digitized payment ecosystem? The complexity in the challenges requires us to apply multi methodological approach ranging from anthropological studies, field studies, experiments, and design science in close collaboration with practice, including, including The Danish Bankers Association, NETS, Dansk Bank, Cell Point Mobile, IBM, and Innovation Lab.

PUBLICATIONS

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Robert M. Davison; Niels Bjørn-Andersen / Do We Care about the Societal Impact of Our Research? : The Tyranny of the H-Index and New Value-Oriented Research Directions. In: Information Systems Journal, Vol. 29, No. 5, 2019, 5 p., p. 989–993.

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Alain Yee Loong Chong; Eric T.K. Lim; Xiuping Hua; Shuning Zheng; Chee-Wee Tan / Business on Chain: A Comparative Case Study of Five Blockchain-inspired Business Models. In: Journal of the Association for Information Systems, Vol. 20, No. 9, 2019, p. 1308–1337.

Elham Shafiei Gol; Mari-Klara Stein; Michel Avital / Crowdwork Platform Governance toward Organizational Value Creation. In: The Journal of Strategic Information Systems, Vol. 28, No. 2, 1.2.2019, p. 175–195.

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Matti Mäntymäki; Abayomi Baiyere; A.K.M. Najmul Islam / Digital Platforms and the Changing Nature of Physical Work : Insights from Ride-hailing. In: International Journal of Information Management, Vol. 49, 12.2019, p. 452–460.

Ioanna Constantiou; Arisa Shollo; Morten Thanning Vendelø / Mobilizing Intuitive Judgement during Organizational Decision Making : When Business Intelligence Is Not the Only Thing That Matters. In: Decision Support Systems, Vol. 121, No. June, 6.2019, p. 51–61.

Thorhildur Jetzek; Michel Avital; Niels Bjørn-Andersen / The Sustainable Value of Open Government Data In: Journal of the Association for Information Systems, Vol. 20, No. 6, 2019, p. 702–734.

TALLINN UNIVERSITY OF TECHNOLOGY – SCHOOL OF BUSINESS AND GOVERNANCE

TAL TECH

ABOUT THE INSTITUTION

The Ragnar Nurkse Department of Innovation and Governance (RND) under the School of Business and Governance was established in 1992 and was called the Department of Public Administration until 2012. RND is the largest and most international Public Administration teaching and research centre in Estonia, having approximately 30 staff members. RND is the only higher education research centre in Estonia that teaches Public Administration on all three levels: BA, MA and Ph.D. having over 500 students.

RND is a part of TalTech – Tallinn University of Technology is the only university focusing on engineering and technology in Estonia. The University's approximately 70,000 alumni have shaped the economic landscape of present-day Estonia. The TalTech campus is also a home to more than 200 high-tech companies (e.g. Skype). The mission of Tallinn University of Technology is to be a promoter of science, technology and innovation and a leading provider of engineering and economic education in Estonia.

RESEARCH TOPICS

RND effectively integrates its three main research fields: (1) Public Administration and Management, (2) Innovation Policy and Technology Governance, and (3) E-Governance leading to a rather unique research profile.

Throughout the three fields, RND special-izes uniquely on interdisciplinary research at the interface of public policy and implementation. Our research looks at how policies are implemented and how the implementation processes feed back into policymaking and in fact change policies. RND deals with evolutionary changes in policy and implementation practices. This approach can be applied to all areas of policymaking and human activity where governments have any role to play.

The main research topics of RND are:

- Innovation, innovation strategies, innovation policies and economic development (Technology Governance)
- Governance, public management reforms and catching-up processes
- E-government and e-governance
- Small states and public management
- Small states and innovation policy and development
- Financial policies and economic development
- Regional policy and regional development;
- Philosophy of science

This year, Prof. Robert Krimmer was listed in the second annual list of the World's 100 Most Influential People in Digital Government, with his research focused on electronic participation and democracy, as well as e-voting, the transformation of the public sector and developing digital societies.

CURRENT RESEARCH PROJECTS

RND Coordinates one of the largest public sector innovation pilots of Horizon2020 Program: The Once-Only Principle Project, acronym TOOP. The project started in January 2017 and lasts until June 2019 (30 months) having a budget of 8 Million Euros. TOOP is an innovative action that explores and demonstrates the implementation of the "once-only" principle on a cross-border scale with the aim to reduce the administrative burden for businesses and public administrations. It contributes to the EU digital single market by developing a generic federated architecture that is able to connect registries and e-government architectures in different countries. This architecture is tested and refined through pilot projects in three domains: 1) cross-border e-services for business mobility, 2) connected company data, and 3) online ship and crew certificates. TOOP involves 50 partners from 21 countries. Next to management, RND is involved in the identification of the barriers related to cross-border data exchange and impact assessment. TalTech's Department of Software Science leads the task of IT architecture development.

Professor Robert Krimmer leads the Estonian Research Council Personal Research Funding project: "Internet Voting as Additional Channel for Legally Binding Elections: Challenges to Voting Process Reengineering". The project's duration is 48 months – 1 January 2017 until 31 December 2020 – and has a budget of 50,000 Euros. With general decline of voter turnout in established democracies around the world, a number of countries have started to look into adding alternative means of voting, including internet and postal voting resulting in complex multi-channel elections. The aim of this project is to conduct empirical research into why such offerings are being undertaken and how they influence and change the voting process and governance thereof, as well as answering the question of how the adding-removing of interne voting and other channels affects the overall associated costs.

RND has also participated in the RTE (Real-Time Economy Project). This short research project explored the emerging concept of 'real-time economy' (RTE) – the idea that buying, selling, reporting, and other business transactions could take place via real-time machine-to-machine data exchange instead of human-mediated manual processes.

PUBLICATIONS

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DISSERTATIONS

Noella Edelmann (2017) Online Lurking: Definitions, Implications, and Effects on E-participation.
Supervisor: Professor Robert Krimmer, Professor Peter Parycek (Danube University, Krems).

CONTACT DETAILS

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UNIVERSITY OF TURKU – TURKU SCHOOL OF ECONOMICS – INSTITUTE OF INFORMATION SYSTEMS SCIENCE

Turun yliopisto
University of Turku

ABOUT THE INSTITUTION

The roots of the Institute for Information Systems Science were established in year 1971. Nowadays the Institute is a part of the Department of Management and Entrepreneurship at the University of Turku. The mission of the Institute is to educate professionals, who master both, general management, as well as Information Systems skills. In research, the Institute focuses on supporting companies in their Information Systems management. Issues at individual, industry, national and international level are not neglected. The Institute has been a pioneer in English-speaking education, even at the whole university level.

RESEARCH TOPICS

Information Systems Science completes the sphere of Information Sciences at the University of Turku adding to the more technically and natural science-oriented work at the Department of Future Technologies. Research widley covers the topic

spectrum of Information Systems Science, with a gravity point in Information and Network Management in the Information Economy. Topics such as management of information resources, health care information systems and network-based services (e-services) – including Social Media – belong to the core areas of research, as well as topics on work informatics, ICT ethics, usability issues, and management of ICT in small and medium-sized business.

CURRENT RESEARCH PROJECTS

The institution runs a rich portfolio of projects in different areas. Current examples contain issues such as Business Strategy, digital strategy, governance and management of IT, governance of data, data integration and federation, blockchain and distributed ledger technologies, IT management best practices; CIO/CDO work, ICT in small and medium sized enterprises, process modeling, master and reference data management, preparing for the health social

services renewal in Finland, information system continuity management, management of waste flows, ethical issues within IT, behavioral and social aspects of digital and social media, adoption and diffusion of technological innovations, young people & information technology, freemium business models, virtual worlds, networks and business models, gender in ICT education and hospitality management.

PUBLICATIONS

Islam, A. N., Mäntymäki, M., & Kefi, H. (2019). Decomposing social networking site regret: a uses and gratifications approach. Information Technology & People.

Koskinen, J. S. S. (2019). The concept of Datenherrschaft of patient information from a Heideggerian perspective. Journal of Information, Communication and Ethics in Society.

Mäntymäki, M., Baiyere, A., & Islam, A. N. (2019). Digital platforms and the changing nature of physical work: Insights from ride-hailing. International Journal of Information Management, 49, 452–460.

Mäntymäki, M., Islam, A. N., & Benbasat, I. (2019). What drives subscribing to premium in freemium services? A consumer value-based view of differences between upgrading to and staying with premium. Information Systems Journal.

Niemimaa, M., Järveläinen, J., Heikkilä, M., & Heikkilä, J. (2019). Business continuity of business models: Evaluating the resilience of business models for contingencies. International Journal of Information Management, 49, 208–216.

Peltoniemi, T., & Suomi, R. (2019). Eliminating medicine waste in a Finnish university hospital – a qualitative study. Journal of pharmaceutical policy and practice, 12(1), 1–7.

Ruohonen, J., & Kimppa, K. K. (2019). Updating the Wassenaar debate once again: Surveillance, intrusion software, and ambiguity. Journal of Information Technology & Politics, 1–18.

Strandell-Laine, C., Leino-Kilpi, H., Löyttyniemi, E., Salminen, L., Stolt, M., Suomi, R., & Saarikoski, M. (2019). A process evaluation of a mobile cooperation intervention: A mixed methods study. Nurse education today, 80, 1–8.

INSTITUTION AT A GLANCE

The University of Turku is a multidisciplinary scientific university located at the Southwest coast of Finland, in the vibrant student city of Turku. With over 23,000 students and 3,500 employees, the University of Turku is one of the largest universities in Finland. The Institute for Information Systems has three full professors and a total staff of about 25 employees with approximately 20 active doctoral level students. The yearly admission for students to the bachelor level, having Information Systems science as their major subject, is around 15 of the annual admission of 250 of the whole Business School. Yearly, in addition, there are approximately 40 master level students in the two international master's programs of the institute: Global Information Systems Management and International Master in Management of Information Technology. Information systems is a popular minor for students of many areas of Economics, Business Administration as well as Computer Science.

The focus of the research activities within the institute lies within understanding the utilisation of information and communication technology in enterprises and other organisations. The research conducted within the institute covers most of the key areas of Information Systems. The research activities can be classified into four themes:

- Management of Information Systems and Business Information Systems

- Networks and Business Models

- Work Informatics

- Healthcare Information Systems

In terms of research methods used, the institute has a track-record and long traditions of conducting action research dating back to the 1980s. Today, the competence of the faculty members covers the whole methodological spectrum from qualitative to quantitative research.

Despite being in a business school, the school also has a rich tradition in the public sector and third sector organisations. E-health is a good example of this, where the role of public service is essential. Research is done from the viewpoint of different organisational stakeholders: organisation's top management, Information Systems management, as well as individuals such as customers or workers. Recent developments put emphasis on the management

and organisational aspects of data security and privacy, as well as IT governance issues.

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KEDGE BUSINESS SCHOOL – DEPARTMENT OF OPERATIONS MANAGEMENT AND INFORMATION SYSTEMS

ABOUT THE INSTITUTION

KEDGE is a leading French business school with four campuses in France (Paris, Bordeaux, Marseilles and Toulon), three abroad (Shanghai, Suzhou and Dakar) and three partner campuses (Avignon, Bastia and Bayonne). The KEDGE community is made up of 12,600 students (including 25 % coming from abroad), 183 professors (including 44 % coming from abroad), 275 international academic partners, and 60,150 alumni around the world.

KEDGE Business School is AACSB, EQUIS and AMBA-accredited, and is a member of the Conférence des Grandes Ecoles. It is also recognised by the French government, with renowned programmes, and has obtained the EESPIG label. KEDGE was ranked 40th by the Financial Times in the European Business School ranking and 37th globally in its Executive MBA ranking.

Kedge Business School offers variety of degree programmes performed by its core faculty and covers such areas as Global Responsibility, Supply Chain Management, Wine and Spirits Management, Arts and Culture Management and Innovation in SME. International students can also take a semester abroad at one of its partner institutions.

The "Operations Management and Information Systems" (MOSI) department is valued for its competency in the area of Information and Decision Science, Supply Chain Management, Knowledge Management, Serious games, e-business, and Organizational Learning

INSTITUTION AT A GLANCE

- Founded in 1874
- One of the oldest "Grandes Ecoles" en France
- 36 programmes
- 160 permanent professors
- EQUIS, AMBA and AACSB accredited

RESEARCH TOPICS

The main objective of the department of MOSI at Kedge Business School is to develop applied research within the following fields: Information Systems Management, Procurement Management, Supply Chain Management, and Quality Management.

Majority of research topics currently conducted by the faculty of MOSI department includes multiple disciplines, given in the following: IS in Operations Management, Purchasing and IS, e-distribution, e-commerce, e-business, Supply Chain and Operations Management, Decision-making & Decision analysis, Digital Transformation in Supply Chain, Organizational Learning/ Knowledge Management/Competences – Communities of Practices.

Our department has a close collaboration with three Centres of Excellence of Kedge Business School: Marketing, Supply Chain and CSR, and five Centres of Expertise: Wine & Spirits, Innovation & Entrepreneurship, Health Management, Finance Reconsidered, and Creative Industries & Culture.

CURRENT RESEARCH PROJECTS

1) e-commerce and hyperconnected urban distribution

As part of the agreement for the creation of the "La Poste Supply Chain Chair" in collaboration with La Poste, which runs France's leading logistical and industrial network, and Kedge Business School, this industry project aims to meet the challenges of e-commerce and logistics inherent to its customers' new consumption methods, requirements and usages. The objective of this project is to optimize the last-mile delivery of parcels in a soft mode using a decision-support-system to improve the quality of parcel delivery operations. This agreement enables Kedge BS to provide forward-looking research work, innovate business models, with the consideration of technological, environmental or societal factors to its corporate partners.

Contact : *walid.klibi@kedgebs.com*; *larissa.belgouzia@kedgebs.com*

2) Machine Learning Applications in Beauty Care Sephora

Kedge BS employs machine learning methods in the new research project for Sephora, the French multinational chain of personal care and beauty stores, with which the school has long-standing corporate relations. The aim is to optimise omnichannel distribution and implement advanced forecasting for basket analysis and improve the shipping process.

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3) Cloud Computing Transformation and its Strategic Values

This research work investigates the challenges associated with the strategic value dimensions of cloud computing using an exploratory study of 173 cases of companies, covering 17 distinct economic sectors, spread over all continents considering contingency factors such as culture, size, and structure. IT providers need to be distinguishable in a market characterized by a marketable transformation model to meet their clients' requirements. The objective of this project is to measure organizational requirements and managerial strategic objectives as specific indicators, which allow for classification of these dimensions. To identify these dimensions, objectives, challenges, implemented solutions, and results of the transformation to cloud computing are analyzed.

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EVENTS

Data Aquitaine Day

On 7th of February 2019, KEGDE BS hosted the 2nd Data Aquitaine Day on the crossroad of AI, OR, and Data Science. This important scientific and practical event of big scale was organized in collaboration with ROADEF (French Soiciey of Oerational research and Decision support), IMB (Bordeaux Institut of Mathématics), INRIA (National Research Institut on Numerical Sciences) and several major associations of the South-West of France, working in data research field. 27 presentations coming from different horizons in Data science attracted 360 participants, mainly engineers and researchers for different companies and laboratories of the region. Master and doctoral students also took part in this event.

Smart Cities Conference

The conference "Smart Cities: how the data and AI could help in optimizing logistics?" was held on June 12th, 2019 on the KEDGE BS campus. More than 50 KEDGE alumni participated in this event organized as a round- table with professionals of the sector.

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PUBLICATIONS

Alizadeh M., Amiri-Aref M., Mustafee N., Matilal S. (2019). A Robust Stochastic Casualty Collection Points Location Problem. European Journal of Operational Research, 279 (3): 965–983.

Amiri-Aref A., Farahani RZ., Hewitt M., Klibi W (2019). Equitable location of facilities in a region with probabilistic barriers to travel. Transportation Research Part E: Logistics and Transportation Review, 127: 66–85.

Bouzdine- Chameeva T., Tesson P., Jaegler A. (2019) " Value Co-creation in Wine Logistics: The Case of DARTESS", IEEE Engineering Management Review, 47 (1): 115–125.

Chakraborty T., Satyaveer. S., Chauhan, Anjali A., Bouzdine-Chameeva T. (2019) "Two-period pricing and ordering policy with price sensitive uncertain demand", Journal of Operational Research Society, 70 (3): 377–394.

Dupouët O, Bernela B, Ferru M. (2019) Network Dynamics and Communities in Applied Biomedical Research. Journal of Innovation Economics Management, 3: 213–233.

Marla L., Rikun A., Stauffer G., Pratsini E. (2019) Robust Modeling and Planning: Insights from Three Industrial Applications – Available at SSRN 3325347.

DISSERTATIONS/HABILITATIONS

Imen Ben Mohamed (2019) "Modeling and solution approaches for the stochastic two-echelon distribution network design problem", Supervised by François Vanderbeck, University of Bordeaux and Walid Klibi, Operations Management and Information Systems Department, KEDGE BS.

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NATIONAL UNIVERSITY OF IRELAND GALWAY – LERO RESEARCH CENTRE AND BUSINESS INFORMATION SYSTEM

ABOUT THE INSTITUTION

NUI Galway was founded in 1845 and has grown massively in size and reputation over the past 170 years. According to QS World University Rankings, the University is now among the Top 1% in the world. NUI Galway offers a wide range of undergraduate and postgraduate courses, as well as flexible learning, professional qualifications and online learning options. NUI Galway has five Colleges, 16 Schools, and over 50 academic disciplines.

Lero NUI Galway resides within the J.E. Cairnes School of Business & Economics. Lero is the Irish software research centre. It brings together leading software research teams from universities and institutes of technology, in a coordinated centre of research excellence with a strong industry focus.

Lero NUI Galway aims to deliver word-class, high impact research through industry collaboration. We work at the cutting edge of software development and management, providing unique insights that impact the performance of organisations, while also setting the academic research agenda in the area.

The groups have received over €4m in research funding and secured another €3.5m over the next 4 years. The research is funded by Enterprise Ireland, Science Foundation Ireland, the Irish Research Council, the European Commission and by multinational industry partners.

RESEARCH TOPICS

Our research concentrates on the following key areas: agility, temporality, open innovation, project portfolio management.

Agility: The growing popularity of agile/lean methods such as Scrum and Kanban indicate a strong desire to improve how we work and create value for customers. Despite many potential benefits of agile/lean adoption, there is no recipe to follow that will guarantee success. We examine agile methods within industry settings and further contribute to the concept and customisation of agile methods.

Project Portfolio Management: This gap in the literature becomes even more pertinent when we consider that contemporary implementations of agile go beyond small co-located teams with non-standard implementations now widespread – i.e., large and distributed teams or start-ups.

Temporality: Researchers are quick to refer to time in simple terms such as speed of organisational and social life. Our research explores time as an inherently complex, multi-faceted, subtle and complex phenomenon. This includes the evaluation of the true 'velocity', speed and value afforded by analytics and methods such as agile and flow.

Open Innovation: Open Innovation and the associated domains of crowdsourcing, crowdfunding and inner source software are changing the way organisations run projects. While there has been much focus in practice about the use of these methods, little reflection exists upon the theory and processes that underpin the concept. As organisations are faced with increased competition in the innovation space, new methods are needed to form the next generation of innovative products.

This presents new challenges for the scaling of agile/lean and requires a rethink of project portfolio management.

CURRENT RESEARCH PROJECTS

A core activity is the researcher-industry knowledge exchange. These exchanges take place every three months and provide evidence-based insights on software implementation and management issues. This enables Lero NUI Galway to create tangible research outcomes that are immediately applicable to organisation settings. The team works with multinationals such as Dell, AIB, Accenture, and Markit | Information Mosaic to deliver solutions to software agility issues.

Currently the team looks at areas such as: (I) social network analysis of multiplex information flow, with a particular emphasis on open and networked innovation and the role of information and communication technologies within these paradigms, (II) the use of open innovation strategies and practices across, public, private and philanthropic organisations, (III) the socio-technical aspects of information systems development (ISD) (Lean, Flow, Scrum) and the emphases on viewing ISD as evolving activity systems (teams, organisations) beyond a single user, (IV) software engineering practices in software start-ups and the adoption of Lean start-up approach and practices in large and established organisations (V) information systems project portfolio management through the lens of complex adaptive systems theory, (VI) temporality within the context of ISD.

The Lero team at NUI Galway have now established a "Time and Technology" group. This group will examine how technology is radically shaping not only the pace and rhythms of work, performance, and life more generally, but also the overall human experience of time. An emerging and interdisciplinary research programme examines these complex phenomena from the perspectives of business analytics, psychology, sociology and computer science, exploring a diverse range of topics including the velocity afforded by analytics and methods such as agile and flow, the role of technology in societal pace and rhythms of life, temporality and ethical decision-making in artificial intelligence, and the dialectical relationships between time and technology in a liquid modern era. Members of the group have recently published research, blogs and articles (see below) on the complexity of time and the interplay between time and technology in organisational and societal contexts.

PUBLICATIONS

Conboy, K., Mikalef, P., Dennehy, D., & Krogstie, J. 2019. Using Business Analytics to Enhance Dynamic Capabilities in Operations Research: A Case Analysis and Research Agenda. European Journal of Operational Research. DOI: 10.1016/j.ejor.2019.06.051.

Dennehy, D., Kasraian, L., O'Raghallaigh, P., Conboy, K., Sammon, D., & Lynch, P. (2019) 'A Lean Startup approach for developing minimum viable products in an established company'. Journal of Decision Systems. DOI: 10.1080/12460125.2019.1642081.

Denehy, D. and Conboy, K. 2019. "Breaking the Flow: A Study of Contradictions in Information Systems Development (ISD)," Information Technology & People. DOI: 10.1108/ITP-02-2018-0102.

Carroll, N., and Conboy, K. 2019. "Implementing Large-Scale Agile Frameworks: Challenges and Recommendations," IEEE Software. DOI: 10.1109/MS.2018.2884865.

Conboy, K., Dennehy, D., & O'Connor, M. (2018). 'Big time': An examination of temporal complexity and business value in analytics. Information & Management. DOI: 10.1016/j.im.2018.05.010.

Brexit, Orwell's 1984 and living in liquid modernity. RTÉ Brainstorm article written by Ronan Doyle.
http://whitakerinstitute.ie/rte-brainstorm-brexit-orwells-1984-and-living-in-liquid-modernity/

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Running to go backwards: The problem with productivity apps. Irish Time article written by Prof Kieran Conboy.
https://www.irishtimes.com/business/work/running-to-go-backwards-the-problem-with-productivity-apps-1.3845916

LUISS GUIDO CARLI UNIVERSITY – CENTRE FOR RESEARCH IN LEADERSHIP, INNOVATION, AND ORGANISATION (CLIO)

ABOUT THE INSTITUTION

Founded in 1966 Luiss is a private Italian University specialised in the social sciences and strongly committed to conduct academic research and educate talented individuals. Luiss faculty is actively engaged in both theoretical and applied research in a variety of areas of business and management including information system (IS). Since 1998, Luiss researchers have achieved international standing in IS education – including teaching and research – initially through the Research Centre on Information Systems (CeRSI) and since 2016 through the Centre for Research in Leadership, Innovation, and Organisation (CLIO). The Luiss IS group represents Italy in the ERCIS network and has contributed to the birth and to the growth of the itAIS (www.itais.org), the Italian Chapter of the AIS (www.aisnet.org). ItAIS plays an important role in the promotion and coordination of the Italian IS academic and scientific community.

Teaching and research activities in the IS field at Luiss are conducted at intersections of Technology, Innovation and Organizing, supported by CLIO members who have published in international top journals including JIT, JSIS, I&M, CAIS, JKM, AMJ and Management Decision.

RESEARCH TOPICS

Research on IS at Luiss is done in conjunction with project activities in which members of the IS group participate in the iterative phases of designing and evaluating sociotechnical interventions. A multidisci-plinary team of IS and organization scholars with backgrounds in computer science, engineering, economics, management, cognitive and political sciences collaborate in both project and research activities by bringing together a multiplicity of methods for planning interventions and analysing phenomena from different perspectives. This approach allows addressing relevant problems and engaging in national and international cooperation with other universities and research institutions.

IS research at Luiss focuses on four main streams. The first is related to Dark Net and the Risk Society. The second is related to Digital Innovation. The third is related to Digital Workplace Transformation. The fourth relates to crowd-based phenomena that can be utilized by public and private organizations like crowdsourcing, crowdfunding and citizen science.

CURRENT RESEARCH PROJECTS

In November 2019 a new project on cyber-security has been started. The Cyber 4.0 is a three-year project funded by the Italian Ministry for Economic Development and aimed at increasing cybersecurity awareness and capabilities in the industrial sector with a special focus on SMEs. The Cyber 4.0 is a public-private partnership involving about 40 partners, including Universities, manufacturers, service providers and companies operating in the defence sector. The CLIO team will contribute to the project by complementing the capabilities of technical Universities with research and teaching activities on the managerial, economic, legal and political aspects of cybersecurity.

In June 2019 the EU Erasmus+ project MASTIS (Establishing Modern Master-level Studies in Information Systems) has been successfully completed. The project has involved ERCIS members who supported Universities in Ukraine and Montenegro in strengthening their programs and teaching practices. The CLIO team has contributed by sharing teaching practices on computational thinking, design thinking and gamification in the area of digital innovation.

Additional IS projects led by CLIO members are related to Dark Nets, IS security management, digital workplace transformation, IT in citizen science, IT in the fruition of cultural goods. Recently the Luiss IS group opened a Chair on Business Transformation and Data Driven Innovation sponsored by Cisco and a postdoc position on Dark Net Markets.

PUBLICATIONS

Ceci, F., Masini, A., & Prencipe, A. (2019). Impact of IT offerings strategies and IT integration capability on IT vendor value creation. European Journal of Information Systems, 1-21.

Acuña, V., Grossi, R., Italiano, G. F., Lima, L., Rizzi, R., Sacomoto, G., … & Sinaimeri, B. (2019). On Bubble Generators in Directed Graphs. Algorithmica, 1-17.

Cappa, F., Oriani, R., Pinelli, M., & De Massis, A. (2019). When does crowdsourcing benefit firm stock market performance? Re-search Policy, 48(9), 103825.

Cappa, F., Rosso, F., & Hayes, D. (2019). Monetary and Social Rewards for Crowdsourcing. Sustainability, 11(10), 2834.

Homberg, F., Vogel, R., & Weiherl, J. (2019). Public service motivation and continuous organizational change: Taking charge behaviour at police services. Public Administration, 97(1), 28-47.

Hinna, A., Homberg, F., Scarozza, D., & Verdini, V. (2019). Public service motivation and public sector employment preference: comparing Italian and British students. Public Money & Management, 1-9.

Hofmann, S., Sæbø, Ø., Braccini, A. M., & Za, S. (2019). The public sector's roles in the sharing economy and the implications for public values. Government Information Quarterly, 101399.

Calluso, C., Tosoni, A., Cannito, L., & Committeri, G. (2019). Concreteness and emotional valence of episodic future thinking (EFT) independently affect the dynamics of intertemporal decisions. PloS one, 14(5), e0217224.

Lombardi, S., Cavaliere, V., Giustiniano, L., & Cipollini, F. (2019). What money cannot buy: The detrimental effect of rewards on knowledge sharing. European Management Review.

Di Pietro, F., Spagnoletti, P., & Prencipe, A. 2018. Fundraising across digital divide: evidences from charity crowdfunding. In A. Lazazzara, R. C. D. Nacamulli, C. Rossignoli, & S. Za (Eds.), Organizing in the digital economy. At the interface between social media, human behaviour and inclusion. 1-10. LNISO, Vol. 27, ISBN 978-3-319-90499-3, Springer.

Di Pietro, Francesca, Andrea Prencipe, and Ann Majchrzak (2018). "Crowd Equity Investors: An Underutilized Asset for Open Innovation in Startups." California Management Review 60.2: 43-70.

Giustiniano, Luca; Franca, Cantoni (2018). Between Sponge and Titanium: Design features for the resilient organization. In: Learning and Innovation in Hybrid Organizations: Strategic and Organizational Insights. ISBN: 978-3-319-62466-2.

Hayes, D. R., & Cappa, F. (2018). Opensource intelligence for risk assessment. Business Horizons.

Hayes, D., Cappa, F., & Cardon, J. (2018). A Framework for More Effective Dark Web Marketplace Investigations. Information, 9(8), 186.

Paris, Alessio; Giustiniano, Luca (2018). Industry 4.0 and the emerging challenges to leadership. In Mangia G. & Cantoni F. (eds): Human Resource Management and Digitalization: the effects of Industry 4.0 on Human Resources. ISBN: 978-1-138-31335-4.

Spagnoletti P., Za S., Winter R., Mettler T. (2018). Exploring Foundations for Using Simulations in IS Research, Communications of the Association for Information Systems, vol 42, art. 10.

Spagnoletti, P., Me, G., Ceci, F., & Andrea Prencipe. (2018). Securing national e-ID infrastructures: Tor networks as a source of threats. In F. Cabitza, C. Batini, & M. Magni (Eds.), Organizing for the Digital World. IT for individuals, communities and societies.: 1–14. LNISO – Springer.

Tee, R., Davies, A., & Whyte, J. (2018). Modular designs and integrating practices: Managing collaboration through coordination and cooperation. Research Policy, forthcoming.

AWARDS

Francesco Cappa has been awarded with the "SIG Strategic Management 2018 Best Paper" at the EURAM 2018 Conference held at University of Iceland (19–22 June 2018), with the paper "Institutional quality differences and the performance effect of M&As on rival firms".
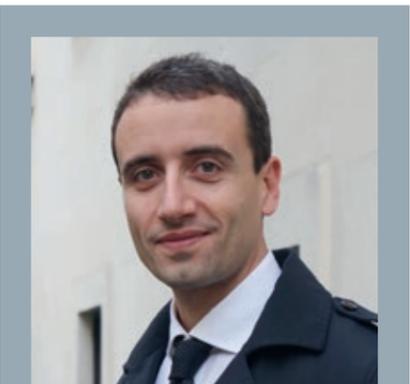
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Francesco Cappa has been awarded with the "Best paper on Crowdfunding" at the Third Entrepreneurial Finance Conference held at Polytechnic University of Milan (26–27 June 2018) and sponsored by Gruppo Bertoldi and Walliance companies, with the paper "The impact of narrative style and entrepreneur's experience in crowd-funding campaigns".

EVENTS

- CISCO Digital Advisory Board (DAB), Rome, October 16th, 2019

- 16th edition of the ItAIS conference, Naples, September 27th–28th 2019

- World Open Innovation Conference 2019, Rome, 12th–13th 2019

UNIVERSITY OF LIECHTENSTEIN – INSTITUTE OF INFORMATION SYSTEMS – HILTI CHAIR OF BUSINESS PROCESS MANAGEMENT

UNIVERSITÄT LIECHTENSTEIN

ABOUT THE INSTITUTION

The Institute of Information Systems at the University of Liechtenstein *(www.uni.li/iwi)* was founded in the early 1990s and has grown continuously ever since. It is represented by the Hilti Chair of Business Process Management, held by Prof. Dr. Jan vom Brocke. The Institute hosts two further chairs, the Hilti Chair for Data and Application Security, held by Prof. Dr. Pavel Laskov as well as the Chair for Technology and Innovation, held by Prof. Dr. Stefan Seidel.

Members of the institute have published in leading IS journals, including MISQ, ISR, JAIS, JMIS, JIT, EJIS, ISJ, Communications of the ACM and MIT Sloan Management Review. The institute offers a master's degree in Information Systems with three subject areas (Business Process Management, Data Science, and Data and Application Security), a Ph.D. program in Information and Process Management, and a bachelor's degree in Business Administration majoring in Information Management & IT.

Internationally recognized researchers who are Liechtenstein Research Fellows visit the institute regularly. The institute is also a co-founder of the Hilti Fellowship Program, which provides highly motivated and committed students in the master's program in Information Systems at the University of Liechtenstein the funding to intern at the Hilti Corporation in Liechtenstein during their studies *(www.uni.li/hilti-fellowship)*. The institute represents the Association for Information Systems (AIS) in Liechtenstein through the Liechtenstein Chapter of the AIS (LCAIS).

RESEARCH TOPICS

Our research specializes in business process management, information systems and innovation, and data and application security. The institute's research agenda is dedicated to identifying and using information and communication technology to meet contemporary organizational needs in five main areas:

Business Process Management takes an innovation-driven and value-oriented perspective on process management and identifies and evaluates the business potential of modern information and communication technology in process management.

Data analytics focuses on the capability to harvest and analyze data as a key enabler for improving and innovating processes as well as services, products, and entire business models

Business Innovation focuses on the transformative power of digital technologies and their social, economic, and environmental impacts.

Data and Application Security focuses the development of reactive security mechanisms

Immersive Technology focuses on emergent systems and their related potential for business innovation

CURRENT RESEARCH PROJECTS
Digital capital creation
Digital capital describes infrastructural (networks etc.) and institutional (regulations etc.) factors that enable digitization on an individual, organizational, political and societal level. It forms the basis for the generation of other forms of capital, such as economic capital or human capital, which is the primary goal of all organizations. Well-known forms of digital capital range from digital procurement processes to the Sharing Economy. As part of a research project, the Institute of Information Systems examines the role of digital technologies in the generation of various forms of capital. The aim of the project is to develop a Liechtenstein model for the generation and use of digital capital.

Detection of Malicious Cryptomining in Network Metadata
Cryptocurrencies and the underlying blockchain technologies have been one of the most intriguing developments in information technology in the last decade and also attracts criminals. By using mining software on users' computers or in their browsers, thieves can earn up to several tens of thousands of dollars a month by illegally extracting cryptocurrencies. In this research study a novel method was developed, with which both browser-based and malware-based mining can be detected by network traffic analysis. The peculiarity of the new method is the use of network metadata as a basis for the detection of illegal mining. The new approach enables accurate detection of illegal mining and fulfils privacy requirements by eliminating the analysis of plain text network data. In contrast to previous techniques for detecting cryptomining, this approach is much more practical from an operational point of view. It does not require the installation of special monitoring software on end devices and makes it significantly more difficult to disguise cryptomining as harmless network traffic.

AWARDS
2019 Editor's Choice
The publication "Design principles for sensemaking support systems in environmental sustainability transformations" by Prof. Dr. Stefan Seidel, Dr. Leona Chandra Kruse, Dr. Nadine Székely, Michael Gau (all from University of Liechtenstein) and Daniel Stieger was awarded "2019 Editor's Choice" by the European Journal of Information Systems (EJIS).

Liechtenstein-Award for Young Researchers
Dr. Leona Chandra-Kruse, Assistant Professor at the Institute of Information Systems, was awarded the Liechtenstein-Award for Young Researchers for her dissertation on "Designing and Making Use of Design Principles".

Associate Editor at Management Information Systems Quarterly (MISQ)
Prof. Dr. Stefan Seidel was appointed Associate Editor of the Management Information Systems Quarterly (MISQ). MISQ is the world's most respected and important journal for information systems.

Strongest research location in German-speaking countries
The Association for Information Systems (AIS) ranked universities worldwide in the area of information systems by counting the number of publications in the leading eight journals of the discipline. In this ranking, the University of Liechtenstein has achieved rank 26 worldwide, rank 4 in Europe and rank 1 in the German-speaking world for the last two years. Prof. Dr. Jan vom Brocke ranks 16th in this ranking worldwide and together with Prof. Dr. Alexander Benlian of the TU Darmstadt, he ranks first among all German-speaking information systems researchers worldwide.

PUBLICATIONS
Abraham, R., vom Brocke, J., & Schneider, J. (2019). Data Governance: A conceptual framework, structured review, and research agenda. International Journal of Information Management (IJIM), 49(December 2019), 424-438.

Berente, N., Seidel, S., & Safadi, H. (2019). Data-Driven Computationally-Intensive Theory Development. Information Systems Research, 30(1), 50-64.

Hevner, A., vom Brocke, J., Maedche, A. (2019), Roles of Digital Innovation in Design Science Research, in: Business & Information Systems Engineering, 61(1).

Schmiedel, T., Recker, J., vom Brocke, J. (2019), The relation between BPM culture, BPM methods, and process performance: Evidence from quantitative field studies, Information & Management (I&M), 56

Seidel, S., Berente, N., Lindberg, A., Nickerson, J., & Lyytinen, K. (2019). Autonomous Tools & Design Work: A Triple-Loop Approach to Human-Machine Learning. Communications of the ACM, 62(1), 50-57.

Simons, A., Kaiser, L. F., & vom Brocke, J. (2019). Enterprise crowdfunding: Foundations, applications, and research findings. Business & Information Systems Engineering, 61(1), 113-121.

Venable, J., vom Brocke, J., Winter, R. (2019), Designing TRiDS: Treatments for Risks in Design Science, in: Australasian Journal of Information Systems (AJIS)

vom Brocke, J., Maedche, A. (2019), The DSR Grid: Six Core Dimensions for Effectively Planning and Communicating Design Science Research Projects, in: Electronic Markets, 2019.

Harr, A., vom Brocke, J., & Urbach, N. (2019). Evaluating the individual and organizational impact of enterprise content management systems. Business Process Management Journal.

vom Brocke, J., Winter, R., Hevner, A., Maedche, A. (2019), Accumulation and Evolution of Design Knowledge in Design Science Research – A Journey Through Time and Space, in: Journals of the Association for Information Systems (JAIS), forthcoming.

Zelt, S., Recker, J., Schmiedel, T., vom Brocke, J. (2019). A Theory of Contingent Business Process Management. Business Process Management Journal, 25(6), 1291-1316.

Complete list of publications:
https://www.uni.li/en/university/institutes/information-systems/research-1/all-publications

DISSERTATIONS
Mathias Tietz: "Designing Digital Choice Sets: How Does the Presentation of Options Influence Users' Decision Making?"

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KAUNAS UNIVERSITY OF TECHNOLOGY – DEPARTMENT OF INFORMATION SYSTEMS / CENTRE OF INFORMATION SYSTEMS DESIGN TECHNOLOGIES

ABOUT THE INSTITUTION

The Department of Information Systems at the Kaunas University of Technology (KTU) was founded in 1993 as a result of more than 20 years of research in the field of information systems (IS). Since then, we have grown to become one of the leading departments in the KTU Faculty of Informatics. In 2012, the Department's Laboratory of Information Systems and Databases Design was restructured into the Centre of Information Systems Design Technologies (headed since by prof. R. Butleris). In 2014, the Center has been expanded as part of the move to the newly established Integrated Science, Studies and Business Centre (Valley) „Santaka". As of autumn 2019, the Department and Centre combined employed 27 researchers and teachers. Over the years, we established good relationships with the local IT companies and accumulated valuable research experience with Lithuanian and international partners.

Our academic work is about providing quality education on fundamental and advanced subjects in the field of information systems. The Department has developed first and second cycle study programmes titled "Information Systems" and "Information Systems Engineering" respectively. At the start of the 2019–2020 study year, 124 students were studying in the Bachelor study programme, and 20 – in the Master's. There were also 10 PhD students at the Department.

RESEARCH TOPICS

The KTU Department of Information Systems / Centre of IS Design Technologies specialize in areas related to Information Systems and Software Engineering, namely:

- Model driven development, model-to-model transformations

- Computer aided software engineering (CASE) technologies

- Conceptual modeling and databases

- Modeling of business processes, business vocabularies, and business rules

- User needs analysis and requirements modeling

- Ontologies and solutions for the Semantic Web

- Machine learning

- Big data and business intelligence

- Knowledge based systems

- Model-driven testing of information systems

- Project management

- Information systems user interface and usability

CURRENT RESEARCH PROJECTS

Development of Measures to Increase Efficiency of the Public Sector Buildings Life-Cycle by Applying Building Information Modeling – BIM-LT (2019–2021). Financed by EU structural funds. The project is carried out in cooperation with the Vilnius Gediminas Technical University as well as several public institutions and coordinated by the Ministry of Environment of Lithuania.

Development of the Artificial Intelligence and Statistical Models Ensemble Construction Algorithm (2019–2020). Commissioned by JSC "RIVILĖ".

Development of Public Services of the Syntactic Semantic Information System of Lithuanian Language (2017–2020). The project is carried out along with the Vytautas Magnus University (Lithuania) and financed by the Ministry of Transport and Communications of Lithuania.

Development of Multichannel Sales Processes Management Equipment "ORIVUS" (2018–2020). Financed by the EU Structural Funds, Investment Action Programme measure "Intellect. General Science - Business Projects", project partner – JSC "NFQ Technologies".

Establishing Modern Master-level Studies in Information Systems – MASTIS (2016–2019). Funded by the Erasmus+ Program. The project has been successfully completed this summer, resulting in the new second cycle study program in IS implemented in 7 Ukrainian and 2 Montenegrin universities. The efforts were coordinated by the University Lyon 2 (France) and Simon Kuznets Kharkiv National University of Economics (Ukraine, member of ERCIS) and involved 7 other EU universities, 6 of them – ERCIS members.

Renewal and Development of Genetic Forest Resources Information System (2018–2019). Funded by the Lithuanian State Forest Survey Service.

EVENTS

The 25th International Conference on Information and Software Technologies took place on October 10–12, 2019, in Vilnius, Lithuania. ICIST is organized annually by the Faculty of Informatics of Kaunas University of Technology and is chaired by the professor Audrius Lopata of the Department of Information Systems.

PUBLICATIONS

Čeponienė, L., Drungilas, V., Jurgelaitis, M., Čeponis, J. (2018). A method for reverse engineering UML use case model for websites. Information Technology and Control, Kaunas : KTU, vol. 47, iss. 4, 623–638.

Makrickiene, N., Gudas, S., Lopata, A. (2019). Ontology and enterprise modelling driven software requirements development approach. Baltic Journal of Modern Computing, Riga : University of Latvia, vol. 7, iss. 2, 190–210.

Skersys, T., Danėnas, P., Butleris, R. (2019). Wizard-guided extraction of SBVR business vocabularies and rules from UML use case models: practical implementation aspect. AIP conference proceedings: International Conference of Numerical Analysis and Applied Mathematics (ICNAAM 2018), Melville, NY : AIP Publishing, vol. 2116, iss. 1, 1–4.

Vaičiukynas, E., Ulicny, M., Pashami, S., Nowaczyk, S. (2019). Learning low-dimensional representation of bivariate histogram data. IEEE transactions on intelligent transportation systems, Piscataway, vol. 19, iss. 11, 3723–3735.

Žitkus, V., Butkienė, R., Butleris, R., Maskeliūnas, R., Damaševičius, R., Wózniak, M. (2019). Minimalistic approach to coreference resolution in Lithuanian medical records. Computational and Mathematical Methods in Medicine, London : Hindawi, vol. 2019, 1–14.

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UNIVERSITY OF WAIKATO –
DEPARTMENT OF MANAGEMENT SYSTEMS

ABOUT THE INSTITUTION

The Waikato Management School (WMS) is accredited by AACSB International, EQUIS – the European Quality Improvement System, and AMBA – the UK-based Association of MBAs. AACSB is the US-based Association to Advance Collegiate Schools of Business and is the world's oldest-established quality assurance body in management education. These accreditations are reviewed every few years by a team of academics from business schools around the world to ensure Waikato Management School staff continue to offer high quality and relevant teaching and that our top research rankings, programming and planning are maintained to international standard. WMS was reaccredited by AMBA in 2017, and EQUIS in 2018.

WMS is one of four divisions in the University and comprises two schools: the School of Accounting, Finance and Economics (SAFE) and the School of Management and Marketing (SoMM) which incorporates digital business. Associate Professor of digital business Stuart Dillon is the head of school. The school has approximately 40 academic staff and covers a number of academic disciplines. There are six academic staff in the Digital Business discipline: Stuart Dillon, Eric Deakins, William Wang, Gohar Khan, Karyn Rastrick, and Shivindu Singh. Digital Business is presently taught

as an undergraduate major and minor, and as a specialised Master's degree.

We welcomed Shivindu Singh to the University of Waikato at the start of 2019. Shivindu joined us from the University of Pittsburgh and has expertise in a range of contemporary digital business topics. Not long after he arrived, he delivered a seminar titled: From Cathedral to Bazaar: Investigating influence of open innovation engagement on firm performance using generalized synthetic control method.

RESEARCH TOPICS

Our research reflects the multidisciplinary nature of the academics within the digital business discipline. Recent relevant research projects focus on:

- Social Media Analytics

- Big Data Analysis

- Cyber-Security

- Online Shopping

- Applied Data Science

- Digitisation

CURRENT RESEARCH PROJECTS

A number of research projects are currently underway, primarily around the business application of emerging technologies and social media analytics.

One such project is seeking to understand the perceived consumer value of retailers social media brand presence. Facilitated by the retailers own social media platforms, consumers were surveyed to assess the impact of retailer social media activity on purchase intentions.

HOSTED SEMINARS

The school regularly hosts seminars by visiting speakers which span a range of topics, reflecting the multidisciplinary research interests of the school. In 2019, as part of a visit by Prof. Gottfried Vossen of ERCIS headquarters, PhD student Denis Martins gave an interesting talk titled Enabling non-technical users to query and purchase data. Christian Rivet, Associate Professor of Marketing at Grenoble École de Management (GEM), delivered an interesting seminar on Bizlab: The Story of Grenoble School of Management's Digital Business Research, Teaching and Training Environment. Finally, Adjunct Professor, Martin Wetzels from Maastricht University, delivered a seminar titled: Changing the Marketing Narrative: A Story of Digital Disruption.

PUBLICATIONS

Khan, G. F., Sarstedt, M., Shiau, W. L., Hair, J. F., Ringle, C. M., & Fritze, M. P. (2019). Methodological research on partial least squares structural equation modeling (PLS-SEM): An analysis based on social network approaches. Internet Research, online, 26 pages. doi:10.1108/IntR-12-2017-0509

Sponder, M., & Khan, G. F. (2018). Digital Analytics for Marketing. Routledge.

Khan, G., & Triers, M. (2018). Assessing the long-term fragmentation of information systems research with a longitudinal multi-network analysis. European Journal of Information Systems, online, 25 pages. doi:10.1080/0960085X.2018.1547853

Fritze, M., Urmetzer, F., Khan, G., Sarstedt, M., Neely, A., & Schafers, T. (2018). From goods to services consumption: A social network analysis on sharing economy and servitization research. Journal of Service Management Research, 2(3), 3–16. doi:10.15358/2511-8676-2018-3-3

Lee, Don, Wang, William Y C, and Leoung, P. 2018* "An exploratory study on Passenger Service Systems adoption, in the context of Interorganisational Information Systems and Home-region Orientation", Pacific Asia Journal of the Association on Information Systems.

Daniel, S., Midha, V., Bhattacherhjee, A., & Singh, S. P. (2018). Sourcing knowledge in open source software projects: The impacts of internal and external social capital on project success. The Journal of Strategic Information Systems, 27(3), 237–256.

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UNIVERSITY OF AGDER – DEPARTMENT OF INFORMATION SYSTEMS

ABOUT THE INSTITUTION

The Department of Information Systems (IS) is one of four departments within the Faculty of Social Sciences at the University of Agder (UiA). With an academic staff of 20 permanent positions and 2 adjunct professors, this is one of the largest IS departments in Norway.

The department offers a three-year bachelor programme in IT and Information Systems, a one year undergraduate study in IT and Information Systems, a two-year masters programme in Information Systems, and a three year PhD programme in Information Systems. The master programme started in 1999 as the first IS master programme in Norway. University of Agder also has a Department of ICT, responsible for education and research within computer science and ICT engineering. In 2019, the two departments started a new, joint master programme in cybersecurity.

The Department of Information Systems contributes actively to the IS community by publishing in leading IS journals, and hosting and participating in international conferences.

RESEARCH TOPICS

The research in the Department of IS is mainly organised in three interdisciplinary centres:

Centre for Digital Transformation (CeDiT) conducts advanced social science research on how digitalization transforms societies and institutions. CeDiT applies an institutional approach to address transformation processes following digital innovation and change, based on a multidisciplinary approach with active engagement of multiple stakeholders. The centre includes researchers from the faculty of Social Sciences, including academics within areas such as organizational studies, political science, sociology, developmental studies, and information systems.

Centre for eHealth focuses on teaching, research, development and testing of new technology for the health and social sector. Taking a user perspective, the aim of the centre is to make everyday life easier in today's health society by developing technological solutions such as smart house solutions and mobile home services.

Centre for Integrated Emergency Management (CIEM) focuses on how the potential of evolving information and communication technologies can be fully deployed for significantly improving emergency preparedness and management. In collaboration with emergency stakeholders, the centre conducts research on community resilience, situational awareness, human-centred sensing, social media, decision support, cybersecurity, and critical infrastructures.

CURRENT RESEARCH PROJECTS

GOV 3.0 Scientific foundations, training and entrepreneurship activities in the domain of ICT enabled governance (2017–2020). The project is a Knowledge alliance funded by the EU under the Erasmus+ programme. GOV 3.0 includes 8 partners from 7 European countries. The University of the Aegean is leading the project. Key objectives include development of scientific roadmap, training curricula, and partnership activities in the domain of ICT enabled governance.

InWork – need-based innovation for including persons with disabilities in working life through the use of technology (2017–2020). Project funded by the The Research Council of Norway. The project consortium consists of University of Agder, The Oslo School of Architecture and Design, two municipalities, two IT consulting companies, the Confederation of Norwegian Enterprises, and The Norwegian Association for Persons with Intellectual Disabilities. The project aims at developing innovative applications that can ease the transition from school to working life for persons with intellectual disabilities.

Sharing incident and threat information for common situational understanding (IN-SITU) (2019–2022). Project funded by The Research Council of Norway. The project is led by the Centre for Integrated Emergency Management at UiA, with the Norwegian University of Science and Technology, Linköping University, and University of Sydney as academic partners. The consortium also includes two IT companies and the County Governor of Agder. INSITU will develop knowledge and solutions for effective information sharing among emergency responders in complex operations requiring collaboration between several agencices.

EVENTS

The Centre for Integrated Emergency Management together with the European Working Group on Humanitarian Logistics organised the fourth EURO HOpe conference on September 5–6, 2019. The conference theme was Enabling Technologies in Humanitarian Supply Chains.

PUBLICATIONS

Aanestad, M.; Vassilakopoulou, P. and Øvrelid, E. (2019). Collaborative Innovation in Healthcare: Boundary Resources for Peripheral Actors. The International Conference on Information Systems (ICIS 2019).

Berge, G. T. et al. (2019). Using the Tsetlin Machine to Learn Human-Interpretable Rules for High-Accuracy Text Categorization With Medical Applications. IEEE Access, 7.

Braccini, A. M.; Sæbø, Ø. and Federici, T. (2019). From the Blogosphere into the Parliament: The Role of Digital Technologies in Organizing Social Movements. Information and Organization, 29(3).

Hofmann, S.; Sæbø, Ø.; Braccini, A. M. and Za, S. (2019). The public sector's roles in the sharing economy and the implications for public values. Government Information Quarterly, 101399.

Hustad, E.; Bekkevik, F. M.; Holm, O. R. and Vassilakopoulou, P. (2019). Employee Information Security Practices: A Framework and Research Agenda. International Journal of E-Services and Mobile Applications, 12(2).

Karlsen, C.; Haraldstad, K.; Moe, C. E. and Thygesen, E. (2019). Challenges of Mainstreaming Telecare. Exploring Actualization of Telecare Affordances in Home Care Services. Scandinavian Journal of Information Systems, 31(1), Article 2.

Pappas, I.; Mikalef, P.; Giannakos, M. and Kourouthanassis, P. (2019). Explaining user experience in mobile gaming applications: an fsQCA approach. Internet Research, 29(2), 293–314.

Rahman, M. T.; Majchrzak, T. A. and Comes, M. (2019). Deep Uncertainty in Humanitarian Logistics Operations: Decision-Making Challenges in Responding to Large-Scale Natural Disasters. International Journal of Emergency Management, 15(3).

Rieger, C. and Majchrzak, T. A. (2019). Towards the definitive evaluation framework for cross-platform app development approaches. Journal of Systems and Software, 153, 175–199.

Tømte, C. E.; Fossland, T.; Aamodt, P. O. and Degn, L. (2019). Digitalisation in higher education: mapping institutional approaches for teaching and learning. Quality in Higher Education, 25(1), 98–114.

DISSERTATIONS

Busch, P. A. (2019). Digital Discretion Acceptance and Impact in Street-Level Bureaucracy.

Hausvik, G. I. (2019). Information Quality in Secondary Use of EHR Data. A Case Study of Quality Management in a Norwegian Hospital.

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UNIVERSITY OF GDANSK – DEPARTMENT OF BUSINESS INFORMATICS

ABOUT THE INSTITUTION

With more than 23,000 students, 11 faculties, and about 1,700 academic staff members, the University of Gdansk is the largest institution of a higher education in the Pomeranian, Poland. It offers the opportunity to study in 87 different fields of studies with 277 specialisation.

The Department of Business Informatics (BI) of the University of Gdansk is involved in research and teaching in the field of Business Informatics on the Bachelor, Master, and Doctoral levels. The Department is the main contributor to the E-learning Educational Platform of the University of Gdansk.

The Department of Business Informatics of the University of Gdansk is conducting intensive teaching and research activities. Some of its academic manuals are bestsellers in Poland. The Department is also active internationally, organizing conferences including the 10th European Conference on Information Systems (ECIS 2002), The 7th International Conference on Perspectives in Business Informatics Research (BIR 2008), The 8th International Conference on European Distance and E-learning Network (EDEN 2009), and the series of SIGSAND/PLAIS EuroSymposia. The Department is the partner of the European Research Center for Information Systems (ERCIS) consortium from 2004.

The Department is involved in the following international research initiatives:

Polish Chapter of Association for Information Systems – PLAIS was awarded four times by AIS as the outstanding chapter – in 2014, 2016, 2017, and 2018. The Department of Business Informatics established a Polish Chapter of AIS – PLAIS that was established in 2006 as the joint initiative of Prof. Claudia Loebbecke, University of Cologne, Germany, former President of AIS, and Prof. Stanisław Wrycza, University of Gdansk, Poland. PLAIS co-organises international and domestic conferences on systems analysis and design as well as on Business Informatics and Systems Engineering.

The Annual International Conference on Perspectives in Business Informatics Research – BIR.

NTIE (Naukowe Towarzystwo Informatyki Ekonomicznej) – Polish Society for Business Informatics Research.

RESEARCH TOPICS

The areas of research interest at Department of Business Informatics cover the following theme:

- Agility, SCRUM
- Big Data
- Business Informatics
- Business Processes Modeling
- Digital Transformation
- E-Business
- ERP, CRM, SCM, WFM, BI Systems
- Information Systems Development
- ICT Global Development
- IT Acceptance Research
- UML and SysML

CURRENT RESEARCH PROJECTS

Development and launching of the specialisation of Bachelor and Master Studies at Faculty of Management of University of Gdansk – Business Informatics: Informatic Applications in Business (AiB);

World IT project, coordinated by University of North Carolina – in cooperation with teams from different universities worldwide. The survey on IT in Polish enterprises in respect of IT occupational culture (ITOC) has been conducted with funding grant of energy producer Energa. The results are going to be published in numerous research papers.

EVENTS

The 12th SIGSAND/PLAIS EuroSymposium'2019 (Gdansk, Poland, September 19, 2019).

PUBLICATIONS

A book entitled Business Informatics. Theory and applications., edited by S. Wrycza and J. Maślankowski, was published in May 2019. The book, with 863 printed pages, was written by Polish and foreign academics and practitioners, including 11 academic employees from Department of Business Informatics at University of Gdansk. The first chapter, entitled Propaedeutics of Business Informatics, was co-written by Prof. Joerg Becker, Academic Director of the ERCIS.

Bibliographical data in original language (Polish):

Wrycza S., Maślankowski J. (ed.): Informatyka ekonomiczna: teoria i zastosowania, 2019, PWN Publishing House, ISBN 978-83-01-20382-5, 863 pp.

Wrycza S., Maślankowski J. (ed.), Information systems: Development, Research, Applications, Education: 12th SIGSAND/PLAIS EuroSymposium 2019, Gdansk, Poland, September 19, 2019: Proceedings Springer, LNBIP 359, 2019.

Wrycza S., The challenge of structuring Business Informatics as an academic discipline, in: The art of structuring: bridging the gap between Information Systems research and practice / Bergener Katrin, Räckers Michael, Stein Armin (ed.), 2019, pp. 31-37.

Gawin B., Marcinkowski B., Making IT global - what facility management brings to the table?, in: Information Technology for Development, vol. 25, no. 1, 2019, pp. 151-169.

Marcinkowski B., Gawin B., A study on the adaptive approach to technology-driven enhancement of multi-scenario business processes, in: Information Technology & People, vol. 32, no. 1, 2019, pp. 118-146.

Weichbroth P., Kuciapski M., A study of the impact of internal and external usability on knowledge transfer by the means of mobile technologies: preliminary results, in: Information systems: research, development, applications, education: 12th SIGSAND/PLAIS EuroSymposium 2019 Gdansk, Poland, September 19, 2019: proceedings/ Wrycza Stanisław, Maślankowski Jacek (eds.), Lecture Notes in Business Information Processing, 2019, pp. 20-33.

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UNIVERSITY OF GDANSK

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ABOUT THE INSTITUTION

The Wrocław University of Science and Technology (WUST) is one of the biggest and best technical universities in Poland with 27 388 students being educated by 2199 academic teachers in 16 faculties: Architecture, Civil Engineering, Chemistry, Electronics, Electrical Engineering, Geo-engineering, Mining and Geology, Environmental Engineering, Computer Science and Management, Mechanical and Power Engineering, Mechanical Engineering, Fundamental Problems of Technology, Microsystem Electronics and Photonics, Pure and Applied Mathematics, Technology and Computer Science, Technology and Engineering, Technology and Natural Sciences.

WUST rates high in the annual rankings of the Polish universities. Recently, the position in the research and teaching field places WUST among the best six universities and three technical universities in Poland. The university is ranked first in the modern technologies group (disciplines: computer science, electronics, materials science) of the 'Where to study?' ranking. In the world perspective, the university is ranked 1026. In 2019 Webometrics Ranking of World Universities, 415. in Europe and 43. in Central & Eastern Europe. It is worth mentioning that Wroclaw University of Science and Technology is on the first place among Polish Universities in the category of innovation, which considers, inter alia, the number of 5547 registered inventions, including utility models, in the last year.

The Department of Information Systems (DIS), chaired by Professor Ngoc Thanh Nguyen, as part of the Faculty of Computer Science and Management currently consists of 21 computer science scientists and 10 Ph.D. students. We regularly co-organize three international scientific conferences: Asian Conference on Intelligent Information and Database Systems (ACI-IDS), International Conference on Computational Collective Intelligence (ICCCI), and International Conference on Multimedia and Network Information Systems (MISSI). We also teach students of the Faculty of Computer Science and Management at two levels of education: three-and-half-year bachelor's degree and one-and-half-year master's degree. Our Department offers two specializations for full-time study programme in the field of Computer Science. We supervise PhD candidates conducting research in areas linked to our work.

RESEARCH TOPICS

Our main objective is to carry out basic and applied research in the field of Information Systems (IS). The major issues, perspectives and challenges are as follows:

• Computational Collective Intelligence understood as an AI sub-field dealing with soft computing methods that enable making group decisions or processing knowledge among autonomous units acting in distributed environments. Web-based systems, social networks and multi-agent systems very often need such tools for working out consistent knowledge states, resolving conflicts and making decisions.

• Knowledge Management Systems referred to any kind of IS that store and retrieve knowledge, improve collaboration, locate knowledge sources, mine repositories for hidden knowledge, capture and use ubiquitous knowledge.

• Agents and Multi-Agent Systems related to the modern software for constructing autonomous, complex and intelligent systems including the specification of agent communication languages and formalization of ontologies. Agent communication languages provide standard declarative mechanisms for agents to communicate knowledge, whereas ontologies are meant for conceptualization of the knowledge domain. In this context, the problem of semantic mismatch arises and special conflict resolution strategies based on computer-supported negotiations are necessary.

• Recommendation and Personalization in Web Systems applied in a great variety of domains, such as net-news filtering, web recommender, personalized newspaper, sharing news, movie recommender, e-commerce, travel recommender, e-mail filtering, music recommender, user interface recommendation, negotiation systems, etc.

• Ensemble and Hybrid Models that combined linear and non-linear features of existing models of Computational Intelligence. To the methods of ensemble learning, we classify bagging, boosting, stacking, subsampling, random subspaces, mixture of experts, and others.

• Semantic Information Retrieval ranged from link structure analysis to using social network relationship semantics. We use and research paradigms and technologies like Semantic Web, linked data, Web ontologies, and Web data aggregation.

• Multimedia Information Processing covering the following aspects: audio signal processing, image recognition and video clustering, loss and lossless compression.

• System Performance Analysis with content caching techniques, usability testing, content indexing algorithms, and web-based optimization techniques.

• E-Learning Methodologies focused on applications of online collaboration paradigms, like wiki and video conferencing, Learning Management Systems and Learning Content Management Systems, digital documentation techniques, like screencast and annotated (narrated) screenshot slides, and examining based on real-time quizzes.

CURRENT RESEARCH PROJECTS

The Department of Information Systems was involved in the year 2019 in one bilateral cooperation and two national projects.

1) Joint Polish-German research project on "Deep Recommendation based on Collective Knowledge" led by the DBIS Group of the University of Muenster (WWU) and the Department of Information Systems at the Wroclaw University of Science and Technology (WUST). Duration: 2018–2019. Contact: Prof. Dariusz Krol *(Dariusz.Krol@pwr.edu.pl)*

2) Sonata project on "Methods of managing the evolution of ontologies and their alignments". Duration: 2018–2021. Contact: Dr. Marcin Pietranik *(Marcin.Pietranik @pwr.edu.pl)*

3) Regional project entitled "The development of the experimental prototype of the module for automatic assessment of the customer's creditworthiness for a financial institution, using artificial intelligence tools" financed by the Lower Silesian Regional Development Agency. Contact: Dr Adrianna Kozierkiewicz *(Adrianna. Kozierkiewicz@pwr.edu.pl)*

AWARDS

Springer books "Advanced Topics in Intelligent Information and Database Systems" and "Recent Developments in Intelligent Information and Database Systems" are among the top 25% most downloaded eBooks in its respective eBook Collection in 2018.

Prof. Ngoc Thanh Nguyen, head of DIS was elected to the first term of Scientific Council of Excellence.

Dr. Dariusz Król, PhD, DSc was promoted to the position of professor of WUST by the Rector of the Wroclaw University of Science and Technology.

PUBLICATIONS

Dai Tho Dang, Ngoc Thanh Nguyen, Dosam Hwang: Multi-step Consensus: An Effective Approach for Determining Consensus in Large Collectives. Cybernetics and Systems 50(2): 208–229 (2019).

Tuong Le, Bay Vo, Hamido Fujita, Ngoc Thanh Nguyen, Sung Wook Baik: A fast and accurate approach for bankruptcy forecasting using squared logistics loss with GPU-based extreme gradient boosting. Inf. Sci. 494: 294–310 (2019).

Adrianna Kozierkiewicz, Marcin Pietranik: A Formal Framework for the Ontology Evolution. ACIIDS (1) 2019: 16–27.

Bernadetta Maleszka: A method for knowledge integration of ontology-based user profiles in personalised document retrieval systems. Enterprise IS 13(7-8): 1143–1163 (2019).

Marcin Maleszka: Application of collective knowledge diffusion in a social network environment. Enterprise IS 13(7-8): 1120–1142 (2019).

Marek Krótkiewicz: Hypergraph Approach Towards Ontology Design in Association-Oriented Metamodel. Cybernetics and Systems 50(2): 132–153 (2019).

Dariusz Krol, Jan Skowroński, Maciej Zareba and Krzysztof Bartecki: Development of a Decision Support Tool for Intelligent Manufacturing using Classification and Correlation Analysis. 2019 IEEE International Conference on Systems, Man and Cybernetics (SMC). Bari, Italy, October 6–9, 2019.

DISSERTATIONS/HABILITATIONS

Krystian Wojtkiewicz defended his Ph.D. thesis entitled "Unified Process Metamodel" at the Faculty of Electrical Engineering, Automatics and Computer Science of the Opole University of Technology.

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UNIVERSITY OF MINHO – DEPARTMENT OF INFORMATION SYSTEMS

University of Minho
School of Engineering

ABOUT THE INSTITUTION

The Department of Information Systems is located in the Campus de Azurém of the University of Minho, in the city of Guimarães, the cradle city of Portugal. The department was established in the late 1990s, after a graduation program in Information Systems was created. The Department of Information Systems currently offers an integrated master (5 years degree program) in Engineering and Management of Information Systems, a master on Information Systems and a doctoral program on Information Systems and Technologies. All programs involve the collaboration between two schools of the University of Minho: The School of Engineering and the School of Economics and Management.

The research done by the department's researchers (faculty and fellows) is integrated in a R&D unit – ALGORITMI. ALGORITMI encompasses research activities in a wide range of areas including information systems, computer science, computer networks and pervasive computing, industrial electronics, industrial engineering, optimization, among others.

RESEARCH TOPICS

The research performed by the Department's faculty is consolidated in the IST (Information Systems and Technologies) research group of ALGORITMI. This stream includes three main research groups:

Intelligent Data Systems group that deals with technologies, tools, models, and techniques related to Data Mining and Data Warehousing Systems. The main objective is the research in knowledge areas such as Adaptive Business Intelligence, Intelligent Decision Support Systems, Data Mining, Intelligent Data Analysis, Data Warehouse, and OLAP.

Information Systems and Technology for the Transformation of Organizations and Society group. The researchers in this group adopt interdisciplinary approaches and research methods originated in the social sciences and engineering. These approaches are used to study the IS/IT adoption and use in organizations and society, and to develop new tools to solve identified problems or knowledge gaps.

Software Engineering and Management group is devoted to develop state-of-the-art of software-based information systems. This group focuses on both the engineering and management dimensions of the following research topics: (I) analysis and design of information systems; (II) business and location-enhanced database systems; (III) metadata and ontologies for the semantic Web; and (IV) process and project management life-cycles.

CURRENT RESEARCH PROJECTS

In 2019, the IST research was funded by new projects totaling the amount of about 2.110.226,04 €, including the projects:

- ICDS4IM – Intelligent Clinical Decision Support for Intensive Medicine.

- DeM – Deus ex Machina – Symbiotic Technology for Societal Efficiency Gains

- POESIC – Painel para a Observação Estratégica da Sociedade da Informação e do Conhecimento (Panel for the Strategic Observation of the Information and Knowledge Society)

- PROMOS – Prediction and Optimization of Advertising Campaigns for Mobile Devices

- EMPOWER SSE: A Semantic and Linked Data Based Framework for Empowerment of the Social and Solidarity Economy

- IViSSEM – 6.849,32 Journal Articles Everyday: Visualize or Perish!

- e-CIVITAS – Expansão inter-regional da Rede Casas do Conhecimento (inter-regional expansion of the knowledge houses network).

- Test System Intelligent Machines

PUBLICATIONS

Branco, T., Bianchi, I., & de Sá-Soares, F. (2019, May). Cloud Computing Adoption in the Government Sector in Brazil: An Exploratory Study with Recommendations from IT Managers. In International Conference on Green, Pervasive, and Cloud Computing (pp. 162–175). Springer, Cham.

Cardoso, A., Boudreau, M. C., & Carvalho, J. Á. (2019). Organizing collective action: Does information and communication technology matter?. Information and Organization

Cortez, P., Pereira, P. J., & Mendes, R. (2019). Multi-step time series prediction intervals using neuroevolution. Neural Computing and Applications, 1–15.

Costa, E., Costa, C., & Santos, M. Y. (2019). Evaluating partitioning and bucketing strategies for Hive-based Big Data Warehousing systems. Journal of Big Data, 6(1), 34. https://doi.org/10.1186/s40537-019-0196-1

Lima, A., Fernandes, G., & Machado, R. J. (2019, July). Tailoring PMI and OGC Portfolio Frameworks. In International Conference on Computational Science and Its Applications (pp. 357–371). Springer, Cham.

Barros, V. & Ramos, I. (2019). Impact of IT Use on the Collective Attentional Engagement to Innovation: The Case of an Organization in The Cork Sector. ICIS2019, Munique, Germany.

Reascos, I., Carvalho, J. Á., & Bossano, S. (2019, April). Implanting IT Applications in Government Institutions: A Process Model Emerging from a Case Study in a Medium-Sized Municipality. In Proceedings of the 12th International Conference on Theory and Practice of Electronic Governance (pp. 80–85). ACM.

Souza, J. F. L., Santos, M. D., Magalhães, R. M., Neto, E. M., Oliveira, G. P., & Roque, W. L. (2019). Automatic classification of hydrocarbon "leads" in seismic images through artificial and convolutional neural networks. Computers & Geosciences, 132, 23–32.

Teixeira, A., Oliveira, T., & Varajão, J. (2019). Evaluation of Business Intelligence Projects Success–a Case Study. Business Systems Research Journal, 10(1), 1–12.

DISSERTATIONS/HABILITATIONS

Ana Luísa Alves de Lima, "Tailoring PMI and OGC Frameworks for IT Project Portfolio Management" (April 9th, 2019). Supervisors: Ricardo Machado/Gabriela Fernandes.

Carlos Filipe Machado da Silva Costa, "Advancing the Design and Implementation of Big Data Warehousing Systems" (April 11th, 2019). Supervisor: Maribel Yasmina Santos.

Elizama Lemos, "Using Virtual Environ-ments and Learning Objects Adapted to Individual Knowledge-Building Abilities: An Approach to the Learning Style Theory in Distance Learning Courses in a Public Education Institution" (June 28th, 2019). Supervisors: Luís Amaral/Lia Oliveira.

Wagner de Oliveira, "The Science of Services in improving distance education in a public higher education organization" (June 28th, 2019). Supervisor: Luís Amaral.

Teófilo Teixeira Branco Júnior, "Model for Cloud Computing Deployment in Municipal Public Administration" (July 24th, 2019). Supervisor: Filipe de Sá-Soares.

Gilberto Moisés Moma Capeça, "Instrument for measuring the resilience of information systems" (Sept 6th, 2019). Supervisor: Filipe de Sá-Soares.

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NATIONAL RESEARCH UNIVERSITY
HIGHER SCHOOL OF ECONOMICS – MOSCOW

NATIONAL RESEARCH UNIVERSITY

ABOUT THE INSTITUTION

Consistently ranked as one of Russia's top universities, the Higher School of Economics is a leader in Russian education and one of the preeminent economics and social sciences universities in eastern Europe and Eurasia. Having rapidly grown into a well-renowned research university over two decades, HSE sets itself apart with its international presence and cooperation.
Our faculty, researchers, and students represent over 50 countries, and are dedicated to maintaining the highest academic standards. Our newly-adopted structural reforms support HSE's drive to internationalize and the groundbreaking research of our faculty, researchers, and students.

Now a dynamic university with four campuses, HSE is a leader in combining Russian education traditions with the best international teaching and research practices. HSE offers outstanding educational programmes from secondary school to doctoral studies, with top departments and research centres in a number of international fields.

Since 2013, HSE has been a member of the 5-100 Russian Academic Excellence Project, a highly selective government programme aimed at boosting the international competitiveness of Russian universities. *(https://www.hse.ru/en/)*

In 2018 HSE rose 50 places in the Social Sciences Ranking and maintains Position in Business and Economics. *(https://www.hse.ru/en/news/226173007.html)*

Founded in 2002, HSE School of Business Informatics was created with the active participation of leading Russian and multinational companies and is a pioneer in the new educational discipline of Business Informatics, which combines information technology (IT), informatics and management concepts. The school aims to attract talented and motivated young people to form Russia's future entrepreneurial and administrative elite professionals in business informatics. *(https://bi.hse.ru/en/about/)*

RESEARCH TOPICS
- Business value of Enterprise IS
- Industry 4.0
- PLM and production processes
- IoT and IoS
- Big Data Analytics
- Big Data BPM
- S-BPM
- IT outsourcing
- E-Business, Smart Commerce, Web 3.0.
- Semantic Technologies

CURRENT RESEARCH PROJECTS
Grants of the Russian Foundation for Basic Research, devoted to

- the study on the evolutionary Dynamics of Social Networks based on conditional simulation-textured resource environment;

- traveling and quasi-traveling waves in complex dynamical systems;

- theoretical development and simulation of methods of trajectory control over groups of dynamical objects on the basis of hydrodynamics theory and a concept of inverse dynamics problems;

- research and development of mathematical models, methods and algorithms of visualization and graph analysis by the example of social networks;

Bilateral funding program "Helmholtz-Russian Science Foundation Joint Research Groups": "Blockchain: Assessing Suitability of Distributed Ledger Technology"

AWARDS
Graduates from the school of Business Informatics won the ITSM competition in Russia;

The Master programme "Big Data Systems" entered the Top 100 in the QS World University Rankings in the field of business analytics, taking the 51st place *(https://www.hse.ru/en/news/edu/308276109.html)*.

EVENTS
IEEE CBI-2019 *(www.cbi2019.moscow)* was hosted at HSE in Moscow, Russia, 15–17th of July, 2019;

ERCIS 15th Anniversary meeting, May, 2019;

School of Business and Economics, University of Munster, 50th Anniversary, May, 2019;

First graduation of Executive master of management in Industry 4.0 programme;

International Workshop on the Internet of Things and Smart Services (ITSS2019), Moscow, Russia, 15–17th of July 2019;

Russian-French Workshop on Big Data and Applications, Toulon, France, March 2018;

Annual Workshop on Big Data Application organized by the AIS Special Interest Group (SIG) on Big Data Analytics, Munich, Germany, 14th of December, 2019.

SELECTED PUBLICATIONS
Prokofyeva E. S., Maltseva S. V., Zaitsev R. D. Application of Modern Data Analysis Methods to Cluster the Clinical Pathways in Urban Medical Facilities // In bk.: 2019 IEEE 21st Conference on Business Informatics (CBI). Vol. 2. IEEE Computer Society, 2019. P. 75-83.

Dmitriev A., Maltseva S. V., Tsukanova O. A., Dmitriev V. Theoretical Study of Self-organized Phase Transitions in Microblogging Social Networks, // in: Studies in Computational Intelligence Vol. 813: Complex Networks and Their Applications VII. Part 2. Springer, 2019. P. 236-245.

Golubtsov P., Steinshamn S. I. Analytical and numerical investigation of optimal harvest with a continuously age-structured model // Ecological Modelling. 2019. Vol. 392. P. 67–81.

Golubtsov P. Information Spaces for Big Data Processing: Unification and Parallelization of Sequential Information Accumulation Procedures // In bk.: 21st IEEE Conference on Business Informatics (CBI). IEEE Computer Society, 2019. P. 212–220.

Bogdanova T., Bidzhoyan D. Digital Science // Vol. 850: Advances in Intelligent Systems and Computing. Springer, 2019.

Ometov A., Moltchanov D., Komarov M. M. et al. Packet Level Performance Assessment of mmWave Backhauling Technology for 3GPP NR Systems // IEEE Access. 2019. No. 7. P. 9860–9871.

Chepovskiy A., Chepovskiy A., Polyakov I. V. et al. Detection of Communities in a Graph of Interactive Objects // Journal of Mathematical Sciences. 2019. Vol. 237. No. 3. P. 426–431.

Zelenkov Y. A simple decision-making approach for information technology solution selection // International Journal of Web Engineering and Technology. 2019. Vol. 14. No. 1. P. 56–79.

DISSERTATIONS/HABILITATIONS
E. German "Investment Mechanism Analysis of the Republic of Moldova: Formation and Development".

D. Bidzhoyan "Assessing and forecasting the reliability of Russian commercial banks considering the volatility of macroeconomic variables".

Habilitation: *Y. Koucheryavi* "Development and research of a complex of models and methods of resource allocation in wireless heterogeneous communication networks".

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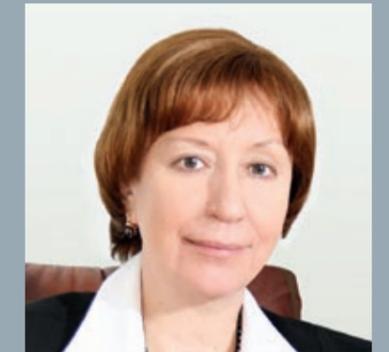
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NATIONAL RESEARCH UNIVERSITY HIGHER SCHOOL OF ECONOMICS – NIZHNY NOVGOROD

NATIONAL RESEARCH UNIVERSITY

ABOUT THE INSTITUTION

The Higher School of Economics in Nizhny Novgorod (HSE NN) was founded in 1996. The main educational activities of the Faculty of Informatics, Mathematics and Computer Science (IMCS) of the HSE NN are related to modern enterprise organization, enterprise architecture, business mathematics and computer modeling. Three laboratories TAPRADESS (Theory and Practice of Decision Support Systems), LATNA (Laboratory of Algorithms and Technologies for Networks Analysis) and TMD (Topological Methods in Dynamics) are the research units of the Faculty IMCS. In 2014, the Department of Fundamental Mathematics was opened.

RESEARCH TOPICS

The research of the Faculty IMCS focuses on following directions:

- Cognitive science – the development of methods and techniques of receiving, processing, storage, use and management of professional knowledge.

- Situational Modeling – multidimensional modeling of the behaviour and decision making processes of individual and collective agents in complex distributed systems.

- Original ways of formalizing the knowledge, which are based on ontological engineering, are supplemented by practical methods of integration and verification of complex corporate service oriented systems.

CURRENT RESEARCH PROJECTS

Digitalization of museums and artistic heritage objects: case of Alexander Pushkin house-museum "Boldino".

AWARDS

Professor Panos Pardalos, Research Director of the Laboratory of Algorithms and Technologies for Analysis of Network Structures, was awarded a Humboldt Foundation Prize.

EVENTS

- XI Summer School on Operations Research, Data, and Decision Making, ORA 2019, May 21–23, 2019.

- New mathematical models and multiagent optimization algorithms in distributed service-oriented systems applicable to different domains (transport, planning, training activities); the result defines new approaches to the creation and use of intelligent decision support systems in the modern service-oriented economy.

- Axiomatic approach to non-compensatory aggregation (decision making rules) and axiomatic approach to general measure of power (power indices) in a voting body.

- Workshop "Organizations Engineering Days", September 06–10, 2019

- Members of Programm Committees of the following conferences:
  BIR-2019, E. Babkin (PC Member)
  EOMAS-2019, E. Babkin, P. Malyzhenkov (Co-chairs)
  EEWC-2019 E. Babkin (PC Member)

- Eduard Babkin has been invited as a keynote speaker (speech topic "Digitalization: A Meeting Point of Knowledge Management and Enterprise Engineering") to the 11th International Joint Conference on Knowledge Discovery, Knowledge Engineering and Knowledge Management, Vienna, Austria, 17–19 September 2019.

- Pavel Malyzhenkov has become the Chair of the 1st Master and Doctoral Consortium held in the frame of EOMAS workshop ("Sapienza" University, Rome, 3–4 June, 2019).

SELECTED PUBLICATIONS

Babkin E., Malyzhenkov P. V., Ivanova M., Ponomarev N. A Methodology for Automatic Formal Verification of Enterprise Architecture, International Journal of Information System Modeling and Design, 2019. Vol. 10. No. 1. P. 1–19.

Babkin E., Malyzhenkov P. V. DEMO as a tool of value co-creation strategy realization in: Advances in Enterprise Engineering XII Vol. 334. Springer, 2019.

Ulitin A., Babkin E., Babkina T., Vizgunov A. Automated Formal Verification of Model Transformations Using the Invariants Mechanism in: Lecture Notes in Business Information Processing Issue 365: Perspectives in Business Informatics Research. Switzerland : Springer, 2019. P. 59–73.

Grachev A., Ignatov D. I., Savchenko A. Compression of recurrent neural networks for efficient language modeling in Applied Soft Computing Journal. 2019. Vol. 79. P. 354–362.

Grechikhin I., Andrey V. Savchenko User Modeling on Mobile Device Based on Facial Clustering and Object Detection in Photos and Videos In bk.: Pattern Recognition and Image Analysis. Prt. 2. Springer, 2019. P. 429–440.

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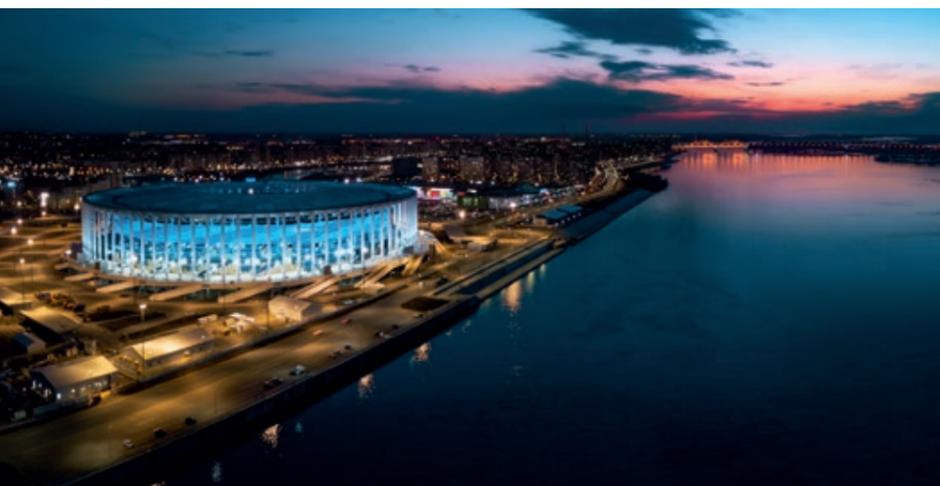Head of LATNA Laboratory

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UNIVERSITY OF MARIBOR – FACULTY OF ORGANIZATIONAL SCIENCES

ABOUT THE INSTITUTION

The Faculty of Organizational Sciences is a founding member of the University of Maribor. It has been involved in research and education about the organizational and informational sciences for more than 50 years. Today it provides Bologna programmes in Information Systems, Human Resource and Educational Systems, and Business and Work Systems. During this period, the faculty has taught a large number of graduates who have pursued employment in the manufacturing and service industries as well as governmental and educational institutions. The research area of the faculty covers complex dynamic management systems, covering aspects from human resources, information systems, business processes, and general management. Research is organized in many laboratories and the eCenter. All are involved in research projects, prototyping, consulting, education, and training at the national and international level. Their activities have been organized and are run following the LivingLab approach, with a strong involvement of business and government organizations, users, IT providers, and universities. The resulting eLivingLab is the Slovenian founding member of the European Network of Living Labs (ENoLL). The faculty has a wide range of experiences from many EU, national, and industry projects. They have established connections with numerous institutes, faculties, and universities around the world and strive

to enhance its internationally renowned reputation.

RESEARCH TOPICS

The research area of the Faculty of Organizational Sciences is focused on the investigation of complex dynamic management systems, covering various aspects from human resources, information systems, business processes, and general management. The main focus is hereby set on digital transformation of organizations and society. In particular, the faculty investigates the implementation of the newest ICT and their impact on evolvement and design of (digital) business models achieving sustainable performance from economic, social, and environmental perspectives.

The majority of research and development activities are carried out within the following research topics:

- Business models and business model innovation
- Digital business
- Data science
- eHealth
- Social media and social CRM
- Cloud computing and HPC
- Internet of things
- Decision support systems
- Management of information systems
- Business processes management
- Simulation systems and models
- Organizational learning

- Quality and asset management
- Enterprise sustainability and sustainable development

CURRENT RESEARCH PROJECTS
EU and bilateral projects:
- MASTIS – Establishing Modern Master-level Studies in Information Systems, Erasmus+ KA2
- Hospitals and faculties together for prosperous and scientific based health-care (ProCare), Erasmus+
- Development of a cyberphysical system for stress control for individuals and groups at-risk, bilateral project

National research programme:
- Decision support systems in digital business, Research programme, P5-0018
- Impact of management, organizational learning and knowledge management in modern organizations, Research programme, P5-0364-0586

EVENTS
Conferences in 2019
32nd Bled eConference: Humanizing technology for a sustainable society, June 16–19, 2019, Bled, Slovenia
https://arhiv.fov.um.si/ebled2019/

38th International Conference on Organizational Science Development, Ecosystem of organizations in the digital age, March 20–22, 2018, Portorož, Slovenia
http://fov.uni-mb.si/konferenca/en/

15th International Symposium on Operations Research in Slovenia – SOR'19, September 25–27, 2019, Bled, Slovenia
http://sor19.fov.uni-mb.si/

Education in Information Society, October 11, 2019, Ljubljana, Slovenia
http://vivid.fov.uni-mb.si/

Next Conferences
33rd Bled eConference – Enabling technologies for sustainable society, June 28 – July 1, 2020, Bled Slovenia
http://bledconference.org

39th International Conference on Organizational Science Development, Organization at innovation and digital transformation roundabout, March 18–20, 2020, Portorož, Slovenia, *https://konferenca.fov.um.si/en/homepage/*

Education in Information Society, October, 2020, Ljubljana, Slovenia
http://vivid.fov.uni-mb.si/

16th International Symposium on Operations Research in Slovenia – SOR'19, September, 2020, Bled, Slovenia
http://sor19.fov.uni-mb.si/

SELECTED PUBLICATIONS
BRELIH, Marjan, RAJKOVIČ, Uroš, RUŽIČ, Tomaž, RODIČ, Blaž, KOZELJ, Daniel. Modelling decision knowledge for the evaluation of water management investment projects. Central European Journal of Operations Research, ISSN 1435-246X, Sep. 2019, vol. 27, iss. 3, pp. 759–781.

ČAMPELJ, Borut, KARNET, Igor, BRODNIK, Andrej, JEREB, Eva, RAJKOVIČ, Uroš. A multi-attribute modelling approach to evaluate the efficient implementation of ICT in schools. Central European Journal of Operations Research, ISSN 1435-246X, Sep. 2019, vol. 27, iss. 3, pp. 851–862.

MAROLT, Marjeta, ZIMMERMANN, Hans Dieter, ŽNIDARŠIČ, Anja, PUCIHAR, Andreja. Exploring social customer relationship management adoption in micro, small and medium-sized enterprises. Journal of theoretical and applied electronic commerce research, ISSN 0718-1876, 2019, vol. 15, iss. 2, pp. 38–58.

KOLOŽVARI, Andrej, STOJANOVIĆ, Radovan, ZUPAN, Anton, SEMENKIN, Eugene S., STANOVOV, Vladimir V., KOFJAČ, Davorin, ŠKRABA, Andrej. Speech-recognition cloud harvesting for improving the navigation of cyber-physical wheelchairs for disabled persons. Microprocessors and microsystems, ISSN 0141-9331. [Print ed.], sep. 2019, vol. 69, pp. 179–187.

PETKOVIĆ, Jasna, PETROVIĆ, Nataša, DRAGOVIĆ, Ivana, STANOJEVIĆ, Kristina, RADAKOVIĆ, Jelena Andreja, BOROJEVIĆ, Tatjana, KLJAJIĆ BORŠTNAR, Mirjana. Youth and forecasting of sustainable development pillars : an adaptive neuro-fuzzy inference system approach. PloS one, ISSN 1932-6203, 2019, vol. 14, no. 6, pp. 1–25.

PUCIHAR, Andreja, LENART, Gregor, KLJAJIĆ BORŠTNAR, Mirjana, VIDMAR, Doroteja, MAROLT, Marjeta. Drivers and outcomes of business model innovation - micro, small and medium-sized enterprises perspective. Sustainability, ISSN 2071-1050, 2019, vol. 11, iss. 2, pp. 1–17.

BAGGIA, Alenka, MALETIČ, Matjaž, ŽNIDARŠIČ, Anja, BREZAVŠČEK, Alenka. Drivers and outcomes of green IS adoption in small and medium-sized enterprises. Sustainability, ISSN 2071-1050, 2019, vol. 11, iss. 6, pp. 1–19.

PUCIHAR, Andreja, ZAJC, Iztok, SERNEC, Radovan, LENART, Gregor. Living lab as an ecosystem for development, demonstration and assessment of autonomous mobility solutions. Sustainability, ISSN 2071-1050, 2019, vol. 11, iss. 15, pp. 1–21.

DISSERTATIONS / HABILITATIONS
Finished Dissertations
Robert Marijan: Relevance of information retrieval in machine learning binary text classification,
Supervisor: Robert Leskovar, Professor.

Dissertations in progress
Marija Milavec Kapun: Model of the patient's self-care process.

Marjan Brelih: A Model of Quantitative and Qualitative Decision Knowledge Modelling Integration.

Matjaž Kragelj: Development of methodology for automatic classification of electronic publications in Universal Decimal Classification – UDK.

Katarina Galof: Developing a model of health care management of the elderly in performance of daily activities in home environment.

Tatjana Kitić Jaklič: Key factors in the design of effective and efficient organizational model of emergency medical services in Slovenia.

Boštjan Kušar: The multi-level model of personnel reorganization of the public health institutions with implementation of public-private partnership.

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POHANG UNIVERSITY OF SCIENCE AND TECHNOLOGY

POSTECH

ABOUT THE INSTITUTION

Industrial and Management Engineering is an academic discipline that involves the study of the design, development, and the management of integrated systems of people, material, equipment, and information in a variety of sectors. Therefore, Industrial and Management Engineering provides excellent opportunities to create new values and innovations in today's dynamic global environment.

We are pursuing an understanding of engineering technology and management by combining the contents of business administration with the existing industrial engineering field. While Industrial Engineering deals with the systematic planning, design, and optimization of complex industrial systems, Industrial and Management Engineering extends its coverage to more comprehensive fields, including the service industry, information industry, and management science.

The mission of the Department of Industrial and Management Engineering is to cultivate creative leaders in the era of convergence and innovation based on the core competencies of Pohang University of Science and Technology (POSTECH). To achieve this mission, we focus on providing specialized education and research programmes based on the unique strengths of the Department; conducting research that significantly contributes to the academia and to the industry; and fostering the development of young talents with systems thinking capability, passion, and humanity.

RESEARCH TOPICS

There are three research groups and two research centers in the department. The Business Analytics (BA) research group studies quantitative analysis techniques based on statistical techniques and optimization techniques to support corporate decision making and strategy formulation. The BA research group extracts information from data and uses it to derive knowledge and finally wisdom. Their main research topics are (1) data mining and graphical modeling techniques, (2) process mining and social network analysis techniques, and (3) large-scale sustainable system analysis.

The Smart Service System Research Group studies technologies that optimize the architecture, processes, and operations of the service system to meet the needs and context of stakeholders. Examples of smart service systems include smart home and smart health care, smart transportation systems, and smart factory. The research group's main research topics are (1) Human-centered system UI / UX design, (2) Smart healthcare service systems, and (3) Smart transportation / energy / information network systems.

The SRM Research Group conducts research on systemic risk management that takes into account the interdependencies of risk factors, from a more diverse perspective on risks at the national, social, and enterprise levels that may arise in modern society. SRM Research Group's major research topics include (1) management of future forecast responses and disaster responses to various crisis situations at the national level, (2) enterprise-wide risk management measures, and (3)

desirable financial systems for the aging society.

Future City Open Innovation Center (FOIC) and Open Innovation Big Data Center (OIBC)

FOIC focuses on the development of innovative future and smart city technologies, including retrofitting existing infrastructures with the latest technological advances for the efficient establishment and proliferation of a smart city. OIBC focuses on developing platform technologies from big data gathered from the implementation of FOIC-led initiatives. Both centers are based on a foundation of open cooperation: the Open Innovation Centers aim to create socioeconomic value by attracting companies and startups to foster their growth through collaboration with the University's advanced research infrastructures.

CURRENT RESEARCH PROJECTS

- Blockchain platform with business models towards cross-domain interoperability (Ministry of Science and ICT, Jun. 2018 – Dec. 2021): The objective of the project is developing a blockchain platform that supports cross-domain interoperability. The platform will be applied in three industries such as healthcare, insurance, and automotive.

- Industrial AI Professional Master and Ph.D Program (Ministry of Trade, Industry and Energy, March. 2019 – Feb. 2024)

- Mining of technology functions for customer-driven product development (National Research Foundation of Korea, Jun. 2016 – May 2019)

- Context-aware Process and Organization Analytics: Extending Business Analytics towards more effective and flexible organization (National Research Foundation of Korea, Mar. 2017 – Feb. 2020)

AWARDS

Minsu Cho, Ph.D, won the research paper award at the Korean Institute of Industrial Engineers, 2018.

SELECTED PUBLICATIONS

Lee. K., Zheng, F., Pinedo, M. L., "Online scheduling of ordered flow shops", European Journal of Operational Research, 272(1):50–60, 2019.

Lee, J., Lee, S., Kim, J., CHOI, I., "Dynamic human resource selection for business process exceptions" Knowledge and Process Management, 26(1):23 - 31, 2019.

KIM, K.J; LIM, C., KIM, M., KIM, K., PAUL, M., "Customer process management : A Framework for Using Customer-related Data to Create Customer Value" Journal of Service Management, 30(1): 105–131, 2019.

Cho, M., Song, M., Yoo, S., Reijers, H. A., "An Evidence-based Decision Support Framework for Clinician Medical Scheduling" IEEE Access, 7:15239–15249, 2019.

Park, K., Kwahk, J., Han, S., Song, M., Choi D., Jang, H., Kim, D., Won, Y., Jeong, I., "Modelling the Intrusive Feelings of Advanced Driver Assistance Systems Based on Vehicle Activity Log Data: Case Study for the Lane Keeping Assistance System" International Journal of Automotive Technology, 20(3):455–463, 2019.

Bang, S.H., Ak, R., Narayanan, A., Lee, Y. T., Cho, H., "A survey on Knowledge transfer for manufacturing data analytics", Computers in Industry, 104:116–130, 2019.

Kim, H., Oh, S., Han, S.H, Chung, M.K., "Motion– Display Gain: A New Control–Display Mapping Reflecting Natural Human Pointing Gesture to Enhance Interaction with Large Displays at a Distance", International Journal Of Human-Computer Interaction, 35(2): 180–195, 2019.

Zheng, F., Pinedo, M.L., Lee, K., Liu, M., Xu, Y., "Towards robustness of response times: minimising the maximum inter-completion time on parallel machines", International Journal of Production Research, 57(1): 182–199, 2019.

Kim, K.H, Kim, K.J, Lee, D.H., Kim, M.G., "Identification of critical quality dimensions for continuance intention in mHealth services: Case study of onecare service", International Journal of Information Management, 46: 187–197, 2019.

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UNIVERSITY OF ST. GALLEN –
INSTITUTE OF INFORMATION MANAGEMENT

Institute of Information Management

University of St.Gallen

ABOUT THE INSTITUTION

For 30 years, the Institute of Information Management at the University of St. Gallen (IWI-HSG) is dedicated to applied and design-oriented research at the interface between business and IT. Founded in 1989, the institute pursues a mixed funding approach from both public and private sources. Privately funded research at IWI-HSG is usually organized in the form of research consortia ("competence centers"). These centers, each of which includes between four and eighteen corporate partners, fall under the responsibilities of different chaired professors. In addition to its research activities, IWI-HSG lecturers engage in executive education, offering degree and non-degree programs in areas such as Business Engineering or IT Business Management. Being one of the largest research units at a top business school, the IWI-HSG's contributions focus on business innovation, including methods, reference models, and innovative prototypes.

As of fall 2019, Prof. Andrea Back, Prof. Walter Brenner, Prof. Reinhard Jung, Prof. Jan Marco Leimeister, and Prof. Robert Winter are heading five research groups comprising twelve assistant professors or postdocs, twenty-six research assistants, eleven research affiliates, fifteen student assistants and twelve support staff members.

SELECTED RESEARCH TOPICS

The Chair of Prof. Back focuses on innovative applications of new technologies covering topics such as agile innovation, cybersecurity, digital maturity and transformation, digital strategy and transformation, new work and learning, smart IoT and mobile business as well as sports digitalization.

The Chair of Prof. Brenner focuses on information management, industrial services and enterprise systems, and digital consumer business (e.g., consumer and big data analytics). Another focal field of interest is design thinking.

The Chair of Prof. Jung investigates IT-enabled service and business innovation with a focus on health IS and wearable technology. It also covers business engineering and the use of data-driven services by individuals.

The Chair of Prof. Leimeister works on designing, implementing, and managing IT-enabled means of organization and innovation. Research activities focus particularly on crowdsourcing, service engineering and management, digital business, and learning.

The Chair of Prof. Winter focuses on analysis and method design for enterprise-wide integration, coordination, and transformation problems. Major projects in this field deploy simulation, experiments, and action design research.

SELECTED RESEARCH PROJECTS

A list of competence centers and current projects can be found at:
http://www.iwi.unisg.ch/?id=1202

Digital Strategy and Transformation: The CC Digital Strategy and Transformation is developing management instruments and tools for strategy work in the digital age.

The Digital Transformation Maturity Model for the Fuzzy Front End stage of digital transformation has been adopted – and adapted – widely in practice. Recently, concepts and methods for managing established firms' collaboration with the startup ecosystem have been published and are being used. The next focus area for relevant research is intrapreneurship methods.
Further information:
https://aback.iwi.unisg.ch/kompetenz/digital-strategy-transformation/
https://aback.iwi.unisg.ch/kompetenz/agile-innovation/

Crowdsourcing: The research goals of CC Crowdsourcing include the development of models and instruments for systematic design, introduction as well as usage of crowdsourcing approaches for digital work and IT-based innovations.
Further information:
http://crowdsourcing.iwi.unisg.ch

Design Thinking: The Design Thinking Group is focused on embedding human-centric innovation tools into corporate structures. The research team strives to improve the capability of corporate IT and to reduce costs and risks in innovation projects.
Further information:
http://dthsg.com/

Digital Service Innovation: Research conducted in the context of the CC Digital Service Innovation revolves around service and business innovation. It also seeks to understand the acceptance and usage of digital services by individuals and enhance their user experience through digital nudging.
Further information:
https://dsi.iwi.unisg.ch/

Ambidextrous Digital Platforms: With the aim of developing both descriptive and prescriptive theories and drawing on both organizational ambidexterity and complex adaptive systems as theoretical lenses, this project is expected to provide a thorough description of the dynamics, determinants, and design configurations through which platform owners simultane-

ously manage and legitimate a balanced co-existence of top-down control and bottom-up emergence.
Further information:
https://www.alexandria.unisg.ch/id/project/247758

Industrial Service and Enterprise Systems: The CC Industrial Service and Enterprise Systems is engaged in studying the interplay between industrial services and corporate information systems. The goal of the CC is the development of scalable and flexible processes, systems, and data management approaches in the industrial context. Further information:
https://www.alexandria.unisg.ch/id/project/243205

Data Management and Analytics Community (DMAC): The DMAC focuses on an enterprise-wide perspective on data in large European banks. The community on the one hand is concerned with challenges in data analytics for business innovation while on the other hand taking care of data management challenges implied for example by legal regulations such as the General Data Protection Regulation (GDPR).
Further information:
https://www.alexandria.unisg.ch/id/project/239746

PUBLICATIONS

The following list is a limited extract of the IWI-HSG publication list in 2019. A complete list of publications with full texts of many papers are available at:
http://www.iwi.unisg.ch/publikationen

Blaschke, M.; Riss, U.; Haki, K. & Aier, S. (2019). Design Principles for Digital Value Co-creation Networks: A Service-Dominant Logic Perspective. Electronic Markets (online first), 1–30.

Gerster, D.; Dremel, C.; Brenner, W. & Kelker, P. (2019). How Enterprises Adopt Agile Structures: A Multiple-Case Study. 52th Hawaii International Conference on System Sciences (HICSS). Maui, HI, USA.

Haki, K.; Blaschke, M.; Aier, S. & Winter, R. (2019). A Value Co-creation Perspective on Information Systems Analysis and Design. Business & Information Systems Engineering (BISE), 61 (4). 487–502.

Beese, J.; Haki, K.; Aier, S. & Winter, R. (2019). Simulation-Based Research in Information Systems: Epistemic Implications and a Review of the Status Quo. Business & Information Systems Engineering (BISE), 61 (4), 503–521.

Gruettner, A.; Vitisvorakarn, M.; Wambsganß, T.; Rietsche, R. & Back, A. (forthcoming). The New Window to Athletes' Soul – What Social Media Tells Us About Athletes' Performances. 53rd Hawaii International Conference on System Sciences (HICSS).

Knop, N.; Blohm, I. & Leimeister, J. M. (2019). Internes Crowdsourcing – Herausforderungen und Lösungsstrategien für eine erfolgreiche Transformation der Arbeitsorganisation. HMD: Praxis der Wirtschaftsinformatik, 56(4), 735–747.

Kleinschmidt, S.; Peters, C. & Leimeister, J. M. (2019). How to Scale Up Contact-Intensive Services: ICT-Enabled Service Innovation. Journal of Service Management (online), 1–22.

Rieder, A.; Lehrer, C. & Jung, R. (2019). How Behavior Change Support Systems Influence Self-Efficacy: A Qualitative Study Using Wearables. European Conference on Information Systems (ECIS). Stockholm-Uppsala, Sweden.

Stöckli, E.; Dremel, C.; Uebernickel, F. & Brenner, W. (2019). How Affordances of Chatbots Cross the Chasm between Social and Traditional Enterprise Systems. Electronic Markets (online), 1–35.

Winkler, T. & Wulf, J. (2019). Effectiveness of IT Service Management Capability: Value Co-Creation and Value Facilitation Mechanisms. Journal of Management Information Systems (JMIS), 36 (2). 639–675.

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EVENTS

In May 2019, the Business Engineering Forum 2019 took place. Initially founded in 2011, the Business Engineering Forum is a knowledge platform concerned with future business models, ecosystems, and their enabling technologies.

In September 2019, the Swiss Industry 4.0 Conference took place. The conference represents one of the leading practitioner events in Switzerland in the field of digitization and digital transformation.

In October 2019, the 50th edition of the St. Galler Anwenderforum took place, this time focusing on enterprise architecture in agile transformation.

UNIVERSITY OF TWENTE – CENTRE FOR TELEMATICS AND INFORMATION TECHNOLOGY

UNIVERSITEIT TWENTE.

ABOUT THE INSTITUTION

The University of Twente is where talent can best realize its full potential. Students and staff are the key. Together, over 3,000 scientists and professionals carry out ground-breaking research, bring about socially relevant innovation, and provide inspiring teaching for more than 11,136 students. To us, entrepreneurship comes as second nature. The campus is home to around 100 businesses, including student-run businesses. The University of Twente has also generated more than 1000 successful spin-off companies including well known E-businesses such as Booking.com, SciSports and Takeaway.com. The university's business park, Kennispark Twente, encourages and assists entrepreneurs to start new companies. But there's so much more than that happening on our wonderful, green campus. Our sports and cultural facilities are unique and we host events such as the world's largest student think tank, Create Tomorrow. Another legend of the Twente campus is the Netherlands' largest student sports event, the Batavieren Race. The campus is a hive of activity - a truly inspirational place to be! - University of Twente, the entrepreneurial university.

The UT has ICT and Information Systems Research among its focus areas.

The Digital Society Institute is one of the three multidisciplinary research institutes of the University of Twente. At the Digital Society Institute, we strive to engineer digitalization toward systems that allow for well-informed, even accountable decision-making. We achieve this by doing scientific research that contributes to solving three challenges:

RESEARCH TOPICS

An essential aspect of our mission is to conduct research that has an impact on society. Digitalization stretches out from creating, innovating and developing digital technologies to adopting and crafting them to our everyday needs, desires and habits. In this way, digitalization shapes technologies by adding value and imposing what we can and are willing to adopt and use for our desires and the challenges we face. The Digital Society institute focuses on three themes:

Data Science and Artificial Intelligence

Various groups at the University of Twente conduct research on data science and artificial Intelligence, including work on fundamental understanding of machine learning, sensors, efficient realisation of artificial intelligence in hardware, to development and application of artificial intelligence in fields such as health, safety and security, the geo-spatial domain, and manufacturing, to name a few. Central unifying themes are embedded and augmented intelligence.

Creating Intelligent Manufacturing Systems

Smart innovations in manufacturing are key to securing the welfare and wellbeing of society. Smart industry is the way forward for industry. Using Smart Industry means personalized and smart products, optimizing human-machine interaction, yielding faster, cheaper, and more sustainable production. It means adapting business models to changing industries and services. And thus of utmost importance to main at the competitive edge.

Improving Healthcare with E-Health

It becomes more and more evident that the current approach to healthcare is not sustainable, especially when considering the increasing volume and demands of chronic diseases, requiring a rethinking of strategies towards innovative solutions. The use of information and communication technologies in healthcare – eHealth – is a promising strategy to improve healthcare worldwide.

Excellence is a key issue. The institute's project Living Smart Campus forms a linking pin between all research activities, and is as such profiling for 'Science for a Smart Society'. The Campus becomes a center of open innovation, to which also industry, government bodies and citizens are committed.

Various departments are joining efforts in these centers to address research challenges in an interdisciplinary way. More information on the centers can be found via *https://www.utwente.nl/en/digital-society/*

CURRENT RESEARCH PROJECTS

DSI is active in dozens of research projects financed at the national and European level and directly by industry. Departments directly related to ERCIS research themes are the IEBIS (Industrial Engineering and Business Information Systems) group and the SCS (Services, Cybersecurity and Safety research group).

The IEBIS group is concerned with studying novel ways of managing business processes and supply chains using innovative techniques such as simulation, (social) data mining, multi-agent coordination and gamification. Researchers in IEBIS use design science methods to develop Decision Support Systems and Inter-Organizational Systems connecting networks of businesses and governments.

The goal of the SCS group is to develop methods and techniques for developing IT-based services that balance service levels with safety- and security levels, and to develop methods and techniques that make existing IT-based services more secure.

Selected research projects include:

Servitization Small and Medium Enterprises – Research project with 2 PhDs jointly with Fontys University of Applied Sciences Autonomous Logistics Miners – This new project investigates the application of AI to autonomous logistics

Circular Performance Management – The new project studies the development of performance and recommender systems for circular products and processes across supply chains

SynchromodalIT – this project aims at designing advanced algorithms and business-IT architectures to facilitate dynamic planing of logistics across various modalities. As part of the project, two PhD theses where completed and a educational game was developed to illustrate the synchromodal concept – see *https://www.trucksandbarges.nl/*

Sharebox – Industrial Symbiosis for sustainable industry (EU Project) – This project has been completed in fall 2019

AWARDS

The N.W.O funded several projects for PhD and postdoc positions in the IEBIS department

EVENTS

IEBIS participated in the end symposium of the European Sharebox project – august 2019

PUBLICATIONS

Dobrkovic, A., Iacob, M.-E., & van Hillegersberg, J. (2018). Maritime pattern extraction and route reconstruction from incomplete AIS data. International Journal of Data Science and Analytics, 5(2), 111–136.

Pérez Rivera, A. E., Mes, M. R. K., & van Hillegersberg, J. (2019). A Simulation Game for Anticipatory Scheduling of Synchromodal Transport. In R. Hamada, S. Soranastaporn, H. Kanegae, P. Dumrongrojwatthana, S. Chaisanit, P. Rizzi, & V. Dumblekar (Eds.), Neo-Simulation and Gaming Toward Active Learning (pp. 67–75).

Strategy on a Page: An ArchiMate-based tool for visualizing and designing strategy—Aldea—2018—Intelligent Systems in Accounting, Finance and Management—Wiley Online Library. (n.d.). Retrieved October 18, 2019,

Barth, S., de Jong, M. D. T., Junger, M., Hartel, P. H., & Roppelt, J. C. (2019). Putting the privacy paradox to the test: Online privacy and security behaviors among users with technical knowledge, privacy awareness, and financial resources. Telematics and Informatics, 41, 55–69.

Pérez Rivera, A. E., Mes, M. R. K., & van Hillegersberg, J. (2019). A Simulation Game for Anticipatory Scheduling of Synchromodal Transport. In R. Hamada, S. Soranastaporn, H. Kanegae, P. Dumrongrojwatthana, S. Chaisanit, P. Rizzi, & V. Dumblekar (Eds.), Neo-Simulation and Gaming Toward Active Learning (pp. 67–75).

DISSERTATIONS

Integration and coordination in after-sales service logistics, Rahimi-Ghahroodi, S., 15 Feb 2019, Enschede: University of Twente. 209 p.

Values for Cooperative Games with Restricted Coalition Formation, Li, X., 20 Feb 2019, University of Twente. 161 p.

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DSI: https://www.utwente.nl/en/
digital-society
Scientific Director:
Prof. Dr. Maarten van Steen

BioTwist: overcoming severe distortions in ridge-based biometrics for successful identification, Kotzerke, J., 19 May 2016, Enschede: Twente University Press (TUP). 197 p.

All publications are available at *doc.utwente.nl*

UNIVERSITY OF TWENTE

LEIDEN UNIVERSITY – LEIDEN INSTITUTE OF ADVANCED COMPUTER SCIENCE (LIACS)

RESEARCH TOPICS

Collaboration for Smart Industry: At LIACS we have a strong focus on providing Smart Computing for Science & Industry. This focus materializes in our longstanding cooperation with industrial partners and governments. These collaborations help us to focus on the applicability of research results and at the same time generate new directions for our research in computer science.

On the one hand, collaborative research adds significant value to the development of the economy. It enhances the innovative potential which in turn strengthens the competitive position. On the other hand, business challenges inspire our researchers to rethink the way they do research and invite them to look for new opportunities beyond their existing landscape. That way we do not only support in developing their competitive position, but also continuously refresh our research. Our collaborations include partners such as Honda Research, Zorginstituut Nederland, Tata Steel, Greenchoice, BMW, KLM, General Electrics Aviation, Young Capital, Qualogy, Ministry of Foreign Affairs, National Police, Wooonconnect, Stabiplan, and De Nederlandsche Bank.

Applied Data Science Lab: Although science and education have top priority, exploratory projects with companies, governments and NGOs generate ample opportunities in terms of societal challenges, science strategy, valorization and research collaboration. In the LIACS Applied Data Science Lab, our master's students and graduates carry out short-term exploratory studies.

Until recently there was a mismatch between short-term company needs and the typical time horizon of research projects: a missed opportunity both for companies as well as for LIACS.

That is why we have developed the Applied Data Science Lab at LIACS. This lab is a vehicle that allows students, graduates and postdocs to work part time for different organizations on exciting projects, supervised and managed by LIACS top researchers.

Unique opportunity for companies and students: Education is the means to develop expertise, analytical skills and social competences in various ways. The Applied Data Science Lab provides a unique opportunity for companies to learn about practical aspects of data science and for students to be inspired and to go beyond the ordinary.

Since the applied Data Science Labs' prime purpose is to help clients explore their opportunities in data science whilst whilst students gain working experience, we charge a break even rate, plus a small markup for administrative efforts and supervision.

At the moment we are working with KLM, General Electrics Aviation, Honda Research Institute Europe, ESTEC/ESA, Greenchoice, Ministry of Foreign Affairs, university finance department, Young Capital, Volvo Ocean Race, and others.

http://liacs.leidenuniv.nl

CURRENT RESEARCH PROJECTS

HORIZON 2020 Research and Innovation Staff Exchanges (RISE) project RISE_SMA "RISE Social Media Analytics", with University Duisburg-Essen (ERCIS Partner), Agder University, Kristiansand (ERCIS partner), and others. The role of LIACS is to devise algorithms for complex network analysis and visualization, and support the work packages on text mining. The kickoff meeting was in April 2019 and dr. Suzan Verberne, dr. Frank Takes and dr. Michael Emmerich participated in this event.

LIACS participates in the ERCIS competence center (see *https://www.ercis.org/* *about-us/competence-centers*) on "Social Media Analytics: Identification and Analysis of Disinformation, Propaganda, and Manipulation via Online Media". Leiden is active in two different focus groups and leader of two workpackages.

See *http://liacs.leidenuniv.nl* for an overview of other activities.

EVENTS

Researchers from LIACS (Michael Emmerich) and Boris Naujoks (TH Cologne), Dimo Brockhoff (Inria France), and Robin Purshouse (U Sheffield) organized the MACODA Lorentz Workshop on Many Criteria Optimization and Decision Analysis in Leiden, which brought together data scientists and decision analysts from August 16 – August 20, 2019 in Leiden Lorentz Center.

Michael Emmerich was general chair of the Modern Machine Learning Technologies and Data Science (MoMLeT) workshop in Shatsk, Ukraine, June 4 2019. The proceedings from this event, which mainly attracted researchers from Eastern Europe, are published in Scopus and DBLP.

Researchers from LIACS also attended the celebration of 10 years of ERCIS in Münster, May 2019.

Researchers from LIACS, in particular Prof. Holger Hoos, are leading in initiating the CLAIRE initiative to promote research on responsible artificial intelligence in Europe. *https://claire-ai.org/*

ABOUT THE INSTITUTION

The Leiden Institute of Advanced Computer Science (LIACS) is a center of excellence for multidisciplinary research and education in computer science and artificial intelligence (AI). LIACS performs research within a number of themes. We concentrate on the study of theoretical foundations and formal methods, and focus on applications in the field of artificial intelligence and data science. We support CLAIRE in their aim to strengthen European excellence in AI research and innovation. And we cooperate with knowledge institutes, governments and corporate organizations. As a consequence of our broad and international working field, we offer complete and outstanding education.

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DISSERTATIONS

Maulana, A., Many Objective Optimization and Complex Network Analysis, Thesis PhD Computer Science, Leiden University, 2018.

See also: *https://theses.liacs.nl/*

SIMON KUZNETS KHARKIV NATIONAL UNIVERSITY OF ECONOMICS – INFORMATION SYSTEMS DEPARTMENT

ABOUT THE INSTITUTION

The Simon Kuznets Kharkiv National University of Economics is the leading higher education institution of Eastern Ukraine, which provides a full range of educational services, carrying out multistage training, retraining and upgrading experts' skills in 15 specialties, such as Economics and Entrepreneurship, Management and Administration, Information Systems and Computer Science, Publishing and Printing Business.

The Information Systems Department has 30 professors, more than 300 students on the bachelor level and more than 100 on the master level. The department is an active member of the IT Ukraine Association and the Kharkiv IT cluster. 12 professors are Microsoft certified specialists. Microsoft IT Academy works since 2009, collaboration with IBM in the frame of the IBM Academic Initiative program has been ongoing since 2012.

The Master Double Diploma Programme "Business Informatics" with University Lumiere Lyon-2, France was established in 2005. According to research of SMBG Consulting Group, the Programme is included in the top 10 Master Programmes in Business Intelligence in France in 2012–2017. The Programme graduated more than 250 students.

The Simon Kuznets Kharkiv National University of Economics has more than 7200 students (including 700+ foreign students), 735 faculty members and offers training primarily structured around the new teaching architecture of the higher ed-ucation. Having considerable experience in training Ukrainian students, KhNUE influences HR, the scientific, technical and economic policy of industrial enterprises and organisations in the country. The University trains highly skilled economists familiar with modern information technologies and innovative models of behav-ior. The University established a flexible system of quality specialists' preparation management, based on continuous moni-toring of KhNUE graduates' achievements.

RESEARCH TOPICS

The majority of Simon Kuznets Kharkiv National University of Economics Information Systems Department research activities are carried out within the following topics:

- Mobile technologies in operative management of an enterprise
- System of monitoring in scientific researches in higher education
- Fuzzy logic and modelling in logistic and marketing
- Information security
- Distributed data warehouses
- Knowledge base and artificial intelligence
- Innovative computer technologies in higher education

CURRENT RESEARCH PROJECTS

Horizon 2020 EQUAL-IST – Gender Equality Plans for Information Sciences and Technology Research Institutions. EQUAL-IST aims at introducing structural changes to enhance gender equality within Information Systems and Technology Research institutions, which have been demonstrated to be among the research sectors most affected by gender inequalities at all levels.

ERASMUS+ CBHE MASTIS – Establishing Modern Master-level Studies in Information Systems. The broader objective is to im-prove the Master Programme in Information Systems according to the needs of the mod-ern society; to bring the universities closer to changes in global labour market and world education sphere; to enable them to stay responsive to employers' needs; to give students an idea of various job profiles in the Information Systems domain.

ERASMUS+ CBHE FabLab – Development of a network infrastructure for youth in-novation entrepreneurship support on fablab platforms. The broader objective is to develop an environment that stimulates engineering creativity, entrepreneurial ac-tivities and fosters youth employability via HEIs-business-industry networking on fab-rication laboratory platforms.

ERASMUS+ CBHE DocHub – Structuring cooperation in doctoral research, transfer-rable skills training, and academic writing instruction in Ukraine's regions. One of the project objectives is to establish an inter-HEI subject-specific research network in information systems that is integrated through regular seminars and co-supervi-sion of PhD students.

ERASMUS+ CBHE C3QA – Promoting inter-nationalization of research through estab-lishment and operationalization of Cycle 3 Quality Assurance System in line with the European Integration Agenda. Specific pro-ject objectives are: To establish an external and internal quality assurance systems to promote quality of Cycle 3 programs and to promote the internationalization of the Cy-cle 3 programs with joint efforts of the key stakeholders and cross-regional coopera-tion. The IS department of KhNUE will work on the establishment of a QA system for PhD programme in Information Systems.

ERASMUS+ CBHE EDUQAS – Implementa-tion of Education Quality Assurance system via cooperation of University-Business-Government in HEIs. The broader objec-tive of the project is to improve education quality assurance systems through the development of efficient internal quality standards leading to better employability of students in partner countries universi-ties. The IS department of KhNUE will work on the establishment of a QA system for bachelor and master degree programs in Information Systems.

Modern methods and means of analysis and development of information systems. The purpose of the research is the develop-ment of basic research in the field of intel-lectual and information-computer technol-ogies in various spheres of human activity.

CONFERENCES

The International Scientific and Practical Conference "Information Technologies and Systems"

International Scientific Conference of Young Scientists and Students "Informa-tion technology in the modern world: the research of young scientists"

EVENTS

Prof. Zolotaryova served on the program committees of the following international conferences: ManComp 2019 -3rd Workshop on Managing Complexity, BIR 2019 Interna-tional Conference on Perspectives in Busi-ness Informatics Research, EuroSymposi-um 2019 on Systems Analysis and Design.

She was editor of The International Journal of Statistics and Application (Romania), Utilizing Big Data Paradigms for Business Intelligence (France).

Prof. Rudenko was a member of the editori-al boards of the following journals: Bionics of intelligence, Information Systems and automation equipment, Herald of Cher-nivtsi University, Adaptive control systems, Problems of information technologies.

PUBLICATIONS

Burdaev V. Model of knowledge base for forecasting development of complications in heart attack of myocardium // Modern engineering and innovative technologies / Heutiges Ingenieurwesen und innovative Technologien, Germany. – 2019 – Issue №7, Part 3, pp.11–20.

Losev M. Synthesis of information control devices which are transferred to diagnostic network with package composition. – 2019 – No. 16 (4), p. 52–63.

Ushakova I.O. Approaches to creating in-telligent chatbots. Information Processing Systems – 2019 – No. 2 (157), pp. 76–83.

Rudenko O., Bezsonov O., Romanyk O., Leb-ediev V. Analysis of convergence of adaptive singlestep algorithms for the identification of nonstationary objects. – Eastern-Euro-pean Journal of Enterprise Technologies – 2019 – No. 1/4 (97), pp.1–14.

Fedorchenko V., Grabovsky E. Development of the optimization model of the interface of multimedia edition. – EUREKA: Physics and Engineering – 2019 – No. 3, pp. 3–12.

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LOUGHBOROUGH UNIVERSITY – CENTRE FOR INFORMATION MANAGEMENT (CIM) – SCHOOL OF BUSINESS AND ECONOMICS

ABOUT THE INSTITUTION

The School of Business and Economics of Loughborough University is one of the most renown business schools in the UK and has triple-accreditation of the MBA programme via AACSB, EQUIS and AMBA. The Centre for Information Management (CIM) is located within the School of Business and Economics as one of its key research hubs. CIM is concerned with the application and implications of modern IT, through digitization, the digital economy and through the development of the theory base of Information Systems.

Situated very close to East Midlands Airport (13km), Loughborough University is 182 km north of London. The campus is the largest in the UK in terms of its size, and the student population of the university is close to 20,000. The origins of the institution are in 1909 when the Loughborough Technical Institute was founded, but it was in 1966 that a university charter was granted. Since then, Loughborough University has risen in stature and is today regarded as one of the UK's top ten universities. Since 2015, Loughborough University has a second campus at the Queen Elizabeth Olympic Park in London.

RESEARCH TOPICS

The Centre for Information Management has many significant research initiatives of which two are highlighted below:

Digitization of Insurance:

The TECHNGI project investigates the opportunities and challenges for the UK insurance industry arising from the application of the new technologies including machine learning, distributed ledger, automated processing, the explosion of available data for business analytics and modelling, social media and the connections emerging to the 'internet of things'. This is an interdisciplinary project and utilizes investigators from Information Systems, Finance, Geography, Law and Engineering.

Please follow TECHNGI on:
https://twitter.com/techngi
Website: www.techngi.uk

Management of Chemical, Biological, Radioactive or Nuclear (CBRN) Incidents:

EU project Toxi-Triage Research is led by Loughborough University. It seeks to set the new global 'Gold Standard' for how emergency services should tackle a CBRN incident.

In an age where CBRN emergency, both accidental and deliberate, poses a real threat to society, new integrated systems and technologies are needed to aid first responders and enhance the protection of citizens. Social media means that the general public can be considered as a sensor for reporting on emerging and on-going events, however the complexities in realising these benefits are immense. Managing large data sets, using artificial intelligence to analyse and model social media interactions, and understanding and presenting real-time information as it occurs are just some of the challenges. Professor Tom Jackson and Dr Ejovwoke Onojeharho have created a system that uses Twitter to detect and track a crisis situation. TOXI-Motive can collect and analyse over 4,000 tweets a second, searching for key words, phrases and hashtags that could be linked to a CBRN incident.

Please visit: http://toxi-triage.eu/

CURRENT RESEARCH PROJECTS
Early Career Researcher Profile, Dr Kayode Odusanye

Kayode's research focuses on technology diffusion and the organisational impact of information systems. He is also keen to conduct macro-level research that informs public policy initiatives. His work has appeared in Information Systems and Economics journals such as the International Journal of Information Management and Economics letters. Kayode is currently investigating diffusion constraints in developing countries and how they affect the uptake of different technologies.

New Recruits to TECHNGI Project

Newly recruited to the TECHNGI project is Alex Zafiris who has a PhD in Information Systems. Alex is researching how new technologies will influence the insurance sector, particularly the value chain and business models. Among the other recruits is finance specialist Joseph Watson who is exploring the role of AI and data technologies in insurance supervision and regulatory compliance, i.e. RegTech.

PhD Experience With ERCIS Doctoral Consortium

Sharon Wagg represented Loughborough at the 2019 ERCISDC, held in Puerto de Pollensa, Spain. Sharon wrote of her experience, "The format of combining a week-long sailing course with presenting and discussing research with fellow PhD students and academics was truly an inspiring, motivational experience. Each PhD student had the opportunity to present their research for 30 minutes, without the use of slides, receive multi-perspective feedback from a supportive audience and participant in group discussion. This combined with learning how to sail, getting to grips with sailing theory and nautical skills, built a great team spirit. The DC has undoubtedly been one of the highlights of my PhD journey so far."

SELECTED PUBLICATIONS

Avgerou, C., Masiero, S. and Poulymenakou, A., 2019. Trusting e-voting amid experiences of electoral malpractice: The case of Indian elections. Journal of Information Technology, p.0268396218816199.

Filstad, C., Simeonova, B. and Visser, M., 2018. Crossing power and knowledge boundaries in learning and knowledge sharing: The role of ESM. The Learning Organization, 25(3), pp.159-168.

Giannakis, M., Spanaki, K. and Dubey, R., 2019. A cloud-based supply chain management system: effects on supply chain responsiveness. Journal of Enterprise Information Management.

Israilidis, J., Odusanya, K. and Mazhar, M.U., 2019. Exploring knowledge management perspectives in smart city research: A review and future research agenda. International Journal of Information Management.

Masiero, S. and Das, S., 2019. Datafying anti-poverty programmes: implications for data justice. Information, Communication & Society, 22(7), pp.916-933.

Simeonova, B., 2018. Transactive memory systems and Web 2.0 in knowledge sharing: A conceptual model based on activity theory and critical realism. Information Systems Journal, 28(4), pp.592-611.

Spanaki, K., Gürgüç, Z., Mulligan, C. and Lupu, E., 2019. Organizational cloud security and control: a proactive approach. Information Technology & People.

Stich, J.F., Tarafdar, M., Stacey, P. and Cooper, S.C., 2019. Appraisal of email use as a source of workplace stress: a person-environment fit approach. Journal of the Association for Information Systems, 20(2), p.2.

Stich, J.F., Tarafdar, M., Stacey, P. and Cooper, C.L., 2019. E-mail load, workload stress and desired e-mail load: a cybernetic approach. Information Technology & People, 32(2), pp.430-452.

DISSERTATIONS

Dr Divyata Sohal successfully presented her thesis entitled "Systemic organisational knowledge management: An action research study in a high-performance sport institute."

The work was supervised by Dr Gillian Ragsdell and Professor Donald Hislop. The research is based in a UK high-performance sport institute and was instrumental in facilitating knowledge management implementation aligned to the organisational strategy, embedded in core organisational processes and adaptive in response to changes in the emerging contexts.

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Dr. Boyka Simeonova

Dr. Patrick Stacey

STEVENS INSTITUTE OF TECHNOLOGY – SCHOOL OF BUSINESS

ABOUT THE INSTITUTION

Founded in 1870, Stevens Institute of Technology is a premier private university focused on research and entrepreneurship in technology-related fields. Located across the Hudson River from Manhattan in Hoboken, New Jersey, Stevens has a population of 3,498 graduate (master's and PhD) students and 3,431 undergraduate students. Stevens is committed to exploring the frontiers of engineering, science, and management through integrative research and education programs. Stevens' three schools and one college support the mission of the Institute: The School of Engineering and Science, the School of Business, the School of Systems and Enterprises, as well as the College of Arts and Letters.

Stevens is regularly listed in the top 3% of US universities based on student return on investment. Notable graduates include Frederick Winslow Taylor, the father of scientific management, Henri Gantt, whose GANTT chart is a staple in most project managers toolkits, and Alfred Fielding, the inventor of the Bubble Wrap.

The School of Business has 61 full-time faculty and 430 undergraduates, 900 MS students, 150 MBA students, 80 executive master's students, 25 PhD students and numerous non-degree graduate, and executive programs. Within the school, the Information Systems groups is among the largest graduate programs in the US, with a mix of evening and weekend classes, as well as online course offerings to students around the globe.

RESEARCH TOPICS

Within the School of Business, two IS-related research groups operate in the areas of Business Process Innovation and Decision Technologies.

The Center for Decision Technologies (CDT), directed by Prof. Jeffrey Nickerson, performs funded research on topics related to decision making, combining perspectives from information systems, management science, organization science, cognitive science, social network analysis, and other computational sciences.

The Center focuses on bringing needed techniques to several areas. In the area of crowdsourcing and collective intelligence, it is now possible to quickly mobilize a crowd in minutes to address large-scale social problems. One example for ongoing research relates to the open source sharing of designs for use with 3D printers. Researchers at the CDT are interested in the role that crowds can play in sustainability – finding local solutions to energy needs that fulfill communities' objectives. In the area of social networks and Big Data, research at the Center focuses on the intersection of transportation and communication networks. In many recent large-scale natural disasters, social media infrastructure has proven more resilient than traditional news outlets. At the same time, rumors propagate, and inaccurate ones impede rescue and recovery, which has led to a research interest in designing social media processes that will be useful during emergencies.

The Center received funding in excess of $4 Million during the last 4 years, from the National Science Foundation and other sources.

The Center for Business Process Innovation (CEBPI) studies the interplay between business processes and the organization. Under the direction of Prof. Michael zur Muehlen, the Center's research activities have been organized around several key issues.

The Center's research on Business Process Analytics is examining how to advance the family of methods and tools that can be applied to event streams in order to support decision making in organizations. Research is also being conducted in the area of enterprise architecture, which contain analytical or prescriptive models of organizations, in order to efficiently identify organizational and technical interfaces, streamline cross-functional operations, and assert compliance to rules and regulations. Researchers at the CEBPI are also interested understanding the dynamics of digitalized design processes and the impact of digital technology on business process innovation.

Research at the CEBPI focuses on how organizations evolve in their ability to govern and change operational work and decision-making processes. Some organizations begin by creating technical infrastructure and the working out organizational adaptions, while others try to work out organizational details first before choosing appropriate technology. In either approach, the roles and responsibilities of a process support and management organization evolve over time, and little guidance exists as to how organizations can pursue operational efficiency in a repeatable and effective fashion.

CURRENT RESEARCH PROJECTS

Recent research at the CDT focuses on the relationship between routines and innovation in design contexts, such as those with "open source-like" characteristics, to better understand the variables and phenomena such as routine variation, sequential structuring, structural evolution, and temporal modes as well as their impacts on design outcomes such as effective coordination, digital artifact innovation, and requirements computation.

Resent research at the CEBPI aims to understand the skills, positions, and organization structures of change management professionals in industries under different regulatory intensities. Additional research projects focus on the opportunities of digital technologies such as Robotic Process Automation, Cognitive Computing, and Blockchain on the design of business processes, and the changing skills of workforces to survive in the age of smart business processes.

SELECTED PUBLICATIONS

Avinadav, T., Chernonog, T., & Ben-Zvi, T. (2019). The effect of information superiority on a supply chain of virtual products. International Journal of Production Economics, 216, 384-397.

Rouse, W. B., Naylor, M. D., Yu, Z., Pennock, M. J., Hirschman, K. B., Pauly, M. V., & Pepe, K. M. (2019). Policy flight simulators: Accelerating decisions to adopt evidence-based health interventions. Journal of Healthcare Management, 64(4), 231-241.

Aronson, Z. H., Reilly, R. R., & Lynn, G. S. (2019). Understanding the role of team member personal style in project performance: Does the type of innovation matter? International Journal of Innovation and Technology Management, 16(4)

Liu, Y., Wu, L., & Li, J. (2019). Peer-to-peer (P2P) electricity trading in distribution systems of the future. Electricity Journal, 32(4), 2-6.

Mithani, M. A. (2019). Corporate political transparency. Business and Society, 58(3), 644-678.

Yang, S. Y., Liu, F. -., Zhu, X., & Yen, D. C. (2019). A graph mining approach to identify financial reporting patterns: An empirical examination of industry classifications. Decision Sciences, 50(4), 847-876.

Li, X., Wu, C., & Mai, F. (2019). The effect of online reviews on product sales: A joint sentiment-topic analysis. Information and Management, 56(2), 172-184.

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Kumar, A., Liu, R., & Shan, Z. (2019). Is blockchain a silver bullet for supply chain management? technical challenges and research opportunities. Decision Sciences.

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Shantia, A., Aflaki, S., & Ghoddusi, H. (2019). Input-price risk management: Technology improvement and financial hedging. Production and Operations Management, 28(8), 2044-2067.

Ehsanfar, A., & Grogan, P. T. (2019). Mechanism design for exchanging resources in federated networks. Journal of Network and Systems Management,

DISSERTATIONS/HABILITATIONS

Kim, Jinhyoung: Pricing, Hedging, and Risk Assessment for Variable Annuities

Topic, Milos: The Role of Chief Information Officers in Driving Innovation within Higher Education

ERCIS members at this year's Annual Workshop in Loughborough

ERCIS

European Research Center for Information Systems

PERSONAL MEMBERS

Apart from associated partner institutions, advisory board members, and competence centers, the ERCIS network occasionally also welcomes personal members. Those dedicated researchers are experts in their field of research and have strong personal connections within the network.

To receive a membership of a personal member, you should already have worked with partners from the network in the context of research projects, joint courses, or publications. Furthermore, you should plan or already have your career in the academic world, beyond your PhD studies. Finally, a recommendation from someone inside the network might strengthen your motivation to become a personal member.

PADERBORN UNIVERSITY
The University for the Information Society

About Me:

My research foci comprise service science, business process management, information modeling, and the design and emergence of information systems. My particular interest is designing information systems that enable service-oriented business models. Apart from conducting consortiums research projects funded by the German government, I was also involved in the RISE_BPM project that networked many ERCIS members in the field of business process management. I am a member of the editorial board for Business & Information Systems Engineering (BISE), and a guest editor for the Information Systems Journal (ISJ) and Electronic Markets (EM). As head of the Service Science Competence Center at ERCIS and steering committee member of the Software Innovation Campus Paderborn (SICP), my mission is to perform excellent research that matters for industry and society.

SELECTED PUBLICATIONS

Beverungen, D., Breidbach, C., Pöppelbuß, J., Tuunainen, V. (2019). Smart Service Systems – An Interdisciplinary Perspective (Editorial). Information Systems Journal, forthcoming.

Beverungen, D., Müller, O., Matzner, M., Mendling, J., vom Brocke, J. (2019). Conceptualizing Smart Service Systems. Electronic Markets, 29(1), pp. 7–18.

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UNIVERSITÀ DEGLI STUDI DELLA Tuscia

About Me:

I am an associate professor at the University of Tuscia, where I teach Organization Theory and Management of Information Systems. I am member of the board of advisors of the PhD course in Economics, Management and Quantitative Methods.

My research activities focus on the impact of ICT on communication and coordination of teams and organizations. Currently I am studying how social media platforms support and constrain the management of communities for collective action, with a specific focus on eParticipation, and in cooperation with the University of Agder (NO), and the University of Pescara (IT). I am also exploring how IoT, Cloud Computing, Big Data, Artificial Intelligence and digital technologies of Industry 4.0 contribute to change the workplace and the working dynamics in manufacturing companies.

SELECTED PUBLICATIONS

Braccini, A. M., Sæbø, Ø., & Federici, T. (2019). From the blogosphere into the parliament: The role of digital technologies in organizing social movements. Information and Organization, (March), 0–1. *https://doi.org/10.1016/j.infoandorg.2019.04.002.*

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About Me:
Since January 2019, I have been an associate professor in Information Systems at the University of Agder, Norway, where I am member of the Centre for digital transformation (CeDiT). My research focuses on the adoption of e-government both by government employees and by citizens. Furthermore, I analyse how governments interact with their various stakeholders via different communication channels. In my research, which deals with e-government on a national and international level, I combine my Information Systems background with insights from other disciplines such as communication and media science. Currently, I am part of a project that compares the German and the Danish national digitalisation strategy. In addition, I am working on a study in which I analyse citizens' channel choice for contacting governments as well as governments' multichannel management strategies.

SELECTED PUBLICATIONS
Hofmann, S., Sæbø, Ø., Braccini, A.M., Za, S. (2019). The public sector's roles in the sharing economy and the implications for public values. Government Information Quarterly.

Lindgren, I., Madsen, C., Hofmann, S., Melin, U. (2019). Close encounters of the digital kind: A research agenda for the digitalization of public services. Government Information Quarterly 36(3), 427-436.

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About Me:
Stefan Stieglitz is Professor for Professional Communication in Electronic Media/Social Media at the University of Duisburg-Essen. In his research, he investigates the digital transformation, with a particular focus on communication and collaboration technologies, and its effects on enterprises and organizations as well as on society and individuals. Based on interdisciplinary research and advanced methods of data analytics, he and his group perform excellent research to improve theory and practice. The research group cooperates with selected partners from industry as well as outstanding national and international academic institutions.

Stefan's work has been published in reputable journals such as Journal of Management Information System, Business & Information Systems Engineering, Information Systems Frontiers, and European Journal of Information Systems (EJIS).

SELECTED PUBLICATIONS
Stieglitz, S., Mirbabaie, M., Kroll, T. & Marx, J. (2019). 'Silence' as a Strategy during a Corporate Crisis – The Case of Volkswagen's 'Dieselgate'. Internet Research, 29(4), 921–939.

Stieglitz, S., Mirbabaie, M., Ross, B. & Neuberger, C. (2018). Social Media Analytics – Challenges in Topic Discovery, Data Collection, and Data Preparation. International Journal of Information Management, 39, 156–168.

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About Me:
Oliver Müller is Professor of Management Information Systems and Data Analytics at Paderborn University. He holds a BSc and MSc in Information Systems and a Ph.D. from the University of Münster's School of Business and Economics. In his research, Oliver studies how organizations create value with (big) data and analytics; for example, by enhancing judgment and decision making, supporting knowledge management, or automating business processes. His research has been published in the Journal of Management Information Systems, Journal of the Association of Information Systems, European Journal of Information Systems, European Journal of Operational Research, and various others.

SELECTED PUBLICATIONS
Schmiedel, T., Müller, O., & vom Brocke, J. (2019). Topic modeling as a strategy of inquiry in organizational research: A tutorial with an application example on organizational culture. Organizational Research Methods, 22(4), 941-968.

Beverungen, D., Müller, O., Matzner, M., Mendling, J., & Vom Brocke, J. (2019). Conceptualizing smart service systems. Electronic Markets, 29(1), 7-18.

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About Me:
I am currently Assistant Professor of Organization Studies and Information Systems at University "G. d'Annunzio" of Chieti-Pescara (Italy), adjunct professor at LUISS University, and visiting professor at the EM Strasbourg Business School. In 2017 and 2018, I was visiting scholar at the University of Agder (Norway). I am the Secretary of the Italian chapter of AIS *(http://www.itais.org)* since 2008, member of program committees and reviewer for national and international conferences as well as journals in domains of Information Systems and Organization Studies. My main research interest is the analysis and design of digital artefacts and organizational systems. At the moment, my focus lies on digital innovations and business transformation affecting people and organizations in the digital ecosystem. I was editor for several books and journal special issues. Moreover, I have published a book, papers on international conferences, book series and journals.

SELECTED PUBLICATIONS
Hofmann, S., Sæbø, Ø., Braccini, A. M., & Za, S. (forthcoming). The public sector's roles in the sharing economy and the implications for public values. Government Information Quarterly, Available online 21 August 2019, 101399. *https://doi.org/10.1016/j.giq.2019.101399.*

Lazazzara, A., & Za, S. (forthcoming). The effect of subjective age on knowledge sharing in the public sector. Personnel Review, *https://doi.org/10.1108/PR-07-2018-0248.*

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About Me:

I am head of the Chair of Industrial Sales and Service Engineering in the Mechanical Engineering Department at the Ruhr-Universität Bochum. My main research interests are in the areas of industrial sales, service, and innovation management. In particular, my team and I investigate how the innovation of industrial services can be supported methodically and technically. Our work enables enterprises to develop novel and digitally enabled B2B service offerings, especially so called smart services, as well as efficient service processes. Amongst others, I am principal investigator of the consortium projects Smart Service Retrofits for Highest Availability of Machinery and Equipment (retrosmart) and Development

of a Privacy Management System for Personalized Assistance Systems in Production and Service (PersonA), both funded by the German Federal Ministry of Education and Research (BMBF). Together with the IHK Mittleres Ruhrgebiet, we recently opened our new innovation lab, the Leonardo Lounge (*www.leonardolounge.de*).

SELECTED PUBLICATIONS

Poeppelbuss, J. & Lubarski, A. (2019). Modularity Canvas – A Framework for Visualizing Potentials of Service Modularity. In: 14th International Conference on Wirtschaftsinformatik, Siegen, Germany.

Knop, S., Merchel, R. & Poeppelbuss, J. (2019). Author collaboration in ten years of IPS2: A bibliometric analysis. In: 11th CIRP Conference on Industrial Product-Service Systems, Zhuhai & Hong Kong, China.

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About Me:

Since 2017, I have been assistant professor of Information Systems at Freie Universität Berlin in cooperation with the Einstein Center Digital Future (board member since 2018). Before that, I completed my doctorate at the University of Münster in 2015 and took on the coordination of the DFG graduate school "User-Centred Social Media" at the University of Duisburg-Essen. My research focus is on communication and collaboration technologies within enterprises, digital workplace transformation and digital nudging. In an exemplary project, I investigate the design and impact of social bots in enterprise social networks. In another project, I study aspects that influence the employee's attitude towards the rapid digital transformation of their work environment. Methodically, I apply instruments of design science as well as social computing.

SELECTED PUBLICATIONS

Meske, C. (2019). Digital Workplace Transformation – On The Role of Self-Determination in the Context of Transforming Work Environments. In: Proceedings of the 27th European Conference on Information Systems (ECIS), pp. 1–18.

Meske, C., Wilms, K. and Stieglitz, S. (2019). Enterprise Social Networks as Digital Infrastructures – Understanding the Utilitarian Value of Social Media at the Workplace. Information Systems Management (ISM) (36:4), pp. 350–357.

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About Me:

Marco De Marco is full professor of Organization and Information Systems at Università Telematica Internazionale UNINETTUNO in Rome where he serves also as Dean of the Faculty of Economics. He is the author of several books and numerous essays and articles; mainly on the development of information systems, the impacts of technology on organizations and e-government. He is a member of the editorial board of several academic journals. In 2008 and 2009 he was a Board committee member of the Association for Information Systems, representing Europe, Africa, and the Middle East. His main research interests have included information systems development and performance measure-

ment methodologies. He has been serving as officer of the major conference on Information Systems ICIS, ECIS, MCIS and he was cofounder of the Italian chapter of the AIS. At ICIS 2010 he was awarded the AIS Fellow Prize for his contribution to the IS discipline.

SELECTED PUBLICATIONS

Trombin, M., Pinna, R., Musso, M., Magnaghi, E., & De Marco , M., "Mobility Management from Traditional to People-centered Approach in the Smart City", 2020, Studies in Systems, Decisions and Control.

Savastano, M., Bellini, F., D'Ascenzo, F., & De Marco, M., "Technology adoption for the integration of the online-offline purchasing. Omnichannel strategies in the retail environment", 2019, International Journal of Retail and Distribution.

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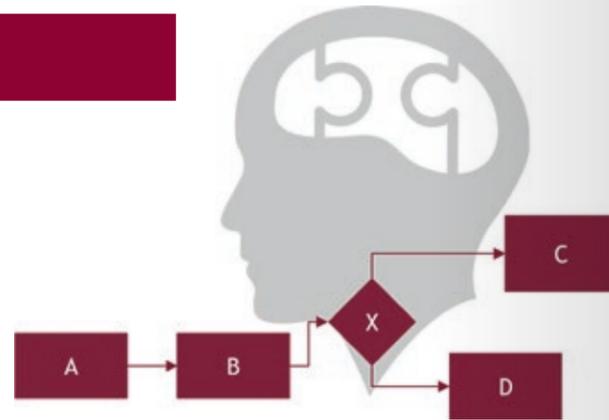Emanuele II 00186, Roma

15 YEARS 2004–2019

› **CONCEPTUAL MODELING**

Nowadays, conceptual modeling supports a variety of business tasks aimed to improve the productivity of companies among different industries. Conceptual models capture various aspects of a company's structure and behavior, such as business processes, business data, and organization. By documenting these aspects through visual representations provided by conceptual models, business analysts can gain a quick overview of how the company works in detail. Hence, conceptual models serve not only to document but also to analyze specific aspects of corporate reality to support economic decision-making. For instance, the use of conceptual models supports Business Process Improvement, Predictive Analytics, Software Customizing, Workflow Management, and Compliance Management. Due to their considerable potential to support decision-making, many companies have created large collections of conceptual models. This makes it difficult for analysts to analyze conceptual models in order to support their business tasks. Hence, the Competence Center for Conceptual Modeling focuses on the development of novel methodologies, providing automatic support for the design and analysis of conceptual modeling in different business domains. In particular, we worked on the following topics:

Model Query Languages: With query languages, analysts can search for sections in conceptual models that match a specific structure with specific contents. Such model query languages serve to, for instance, identifying inefficiencies in business processes, searching for legal violations of information systems, or generating database tables automatically from a data model. Particular query languages that we developed at the Competence Center for Conceptual Modeling are the Generic Model Query Language (GMQL) and the Diagramed Model Query Language (DMQL). Last year, we were invited to contribute to an upcoming state-of-the-art book on process query languages.

Business Rules Management: Business rules are prescriptions that a company has to comply with in order not to face negative monetary or legal effects. One task of Business Rules Management is to identify rules that are relevant for companies and to describe them as formal patterns so they can be applied automatically. Such patterns can be used as input for the above mentioned query languages, for instance, and they define model sections of interest that represent compliance violations, process weaknesses, errors or the like. In several empiric studies, we identified more than 100 query patterns that can be used in business process management projects, for instance, to identify business process compliance violations or inefficiencies. Another task of Business Rules Management is to maintain the repositories of business rules in order to cope with inconsistencies, for instance. We have developed a methodology that can identify such inconsistencies automatically and support analysts in resolving them with corresponding inconsistency measures. We are happy that we just have started a research project on this topic, which is funded by the DFG for the next two years.

Process Mining and Predictive Process Analytics: Predictive Process Analytics is used to learn the structure and behavior of a business process automatically from log files of business software and predict the future behavior of currently running process instances. The prediction results can be used to proactively influence process instances, for example, to assure beneficial behavior and avoid unfavorable one. We can use predictive process analytics, for instance, to support public traffic systems or tourist installations to optimize their operating rate or to avoid conges-

tion, optimize the behavior and output of plants, or decrease fine particulate matter pollution in major cities. We have developed a generic predictive process analytics approach recently, which we currently apply in the mentioned fields. Furthermore, we work on predictive process analytics algorithms based on neural networks and related machine learning approaches.

For more information visit
www.conceptual-modeling.org

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› CRISIS MANAGEMENT

The Competence Center for Crisis Management (C³M) integrates research efforts of the ERCIS network in the domains of crisis management and humanitarian logistics. Our main objective is to identify relevant challenges in practitioner realities and to design appropriate socio-technical solutions. Herein C³M investigates the role of Information and Communication Technologies (ICT) concerning logistics and supply chain management. C³M integrates a collaborating network of different practitioner organizations and research groups from the crisis management and humanitarian logistics domain. The competence center concentrates on six research topics with the application domain, starting at the visualization and modeling of processes up to the analysis and coordination of humanitarian relief chains.

NEWS

The year 2019 was probably the busiest and most exciting one since the founding of C³M. Next to our regular lectures and student projects we successfully executed our virtual seminar on "Challenges and Trends in Information Systems for Crisis Management" with our partner Prof. Mark Haselkorn from the Center for Collaborative Systems for Security, Safety, and Regional Resilience (CoSSaR) at the Human Centered Design & Engineering Department (University of Washington). Additionally, it was a pleasure for us to organize a one-week course on "Humanitarian Logistics" for the Joint Master's Programme in International Humanitarian Action offered by the Network on Humanitarian Action (NOHA) at

NOHA students after the Disaster Response Simulation during the Humanitarian Logistics Course

the group of Prof. Dr. Dennis Dijkzeul, Institute for International Law of Peace and Armed Conflict (Ruhr Universität Bochum). We are also very proud of Kristin Jenssen, who presented our research efforts on the application of Vendor Managed Inventory for humanitarian logistics at the University Surge Support Group (USSG) during the UN's Humanitarian Networks and Partnerships Week (HNPW) in Geneva, Switzerland.

Another highlight was the continuation of our track "Logistics and Supply Chain Management in Crisis Response" with Prof. Dr. Gyöngyi Kovacs from the HUMLOG Institute at the Hanken School of Economics at the 16th International Conference on Information Systems for Crisis Response and Management (ISCRAM) in Valencia, Spain. The fruitful collaboration has been now further strengthened and we are happy to announce that the board member of the Humanitarian Logistics Association, George Fenton, joined our group of track chairs for the ISCRAM Conference next year in Blacksburg, USA. This allows us to extend the regular double-blind review process by adding one practitioner review per submission, which will further increase the review quality and allows for a better knowledge sharing between research and practice.

In the context of the DRIVER+ Project (DRiving InnoVation in Crisis Management for European Resilience, www.driver-project.eu), funded under 7th Framework Programme of the European Commission, great success has been achieved in two key activities of C³M. First, we are very proud of delivering the final version of the handbook on the "Trial Guidance Methodology" (TGM). Together with Dr. Chiara Fonio, from the EC Joint Research Center in Ispra, Italy, we applied an agile development of the DRIVER+ methodology for systematic assessment of innovations in crisis management. We are very grateful for all the interest and feedback from the various CM practitioner organizations in Europe. In particular, we would like to thank the Swedish Civil Contingencies Agency (MSB) as well as the EU-funded BroadWay Project for inviting us to explore application potential of the TGM beyond the DRIVER+ project. Besides, we are also more than happy of having the TGM selected as a potential CEN (European Committee for Standardization) standard and to chair the respective CEN Workshop Agreement on the TGM.

Next to the TGM related results, our second key-activities covered our methodological support of the DRIVER+ trials with the Safety Region Haaglanden in The Netherlands (May) and Austrian Red Cross in Austria (September) as well as the final demo with the EU Emergency Response

C³M

C³M team recovering after the DRIVER+ Trial at the HumLogSUITE basecamp

Coordination Centre in Poland (November). We were happy to have contributed to these great events and are very grateful for all we have learned from the involved practitioners. Within those trials, a special highlight was that our simulation environment HumLogSUITE has been selected as an innovative solution for managing mass evacuations in the area of The Hague, Netherlands. The selection of our solution was not only a great acknowledgment of our research efforts in the past years, but it was also an exceptional experience in seeing research results being transferred into practice.

All the incredible amount of data, insights, and new ideas gathered during this year

will certainly keep us busy with publications in the year 2020. Last but not least, we would also like to thank Roman Peperhove for inviting us to permanently exhibiting HumLogSUITE in the Future Security Lab at the Einstein Center in Berlin.

We would like to thank all our friends and partners for the great exchanges and collaborations in the year 2019 and we are looking for their continuation as well as some promising new initiatives in the next year.

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Wesendrup K., Rupp, N., Widera, A., Hellingrath, B. (2019) Data Management for Fire Fighting: Challenges and Trends of Data Management for Firefighting in Germany and the Netherlands. ISCRAM.

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Crowded HumLogSUITE Action Center during the DRIVER+ Trial The Netherlands

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DT in SMEs

❯ DIGITAL TRANSFORMATION IN SMES

The Digital Transformation in SMEs Competence Center (DT in SMEs CC) is a joint effort of several ERCIS institutional members, namely University of Agder, University of Luleå, University of Münster, University of Turku, University of Twente, University of Minho, Wroclaw University of Science and Technology. The Competence Center aims at encouraging research and providing expertise on the digital transformation of SMEs. Our research work in the field of information systems (IS) focuses on both practical and theoretical problems of adopting digital technologies to transform the business and leverage the opportunities stemming from the impact of those technology across society.

We support the use of a broad range of research approaches and methods to study the relevant IS phenomena and develop methodological and technological solutions for SMEs. In terms of theoretical contributions, researching the digital transformation in the IS field may be concerned with (Majchrzak et al., 2016):

- elucidating a specific SME challenge related with the IT use or a problem that IT may solve – theory of the problem;

- explaining how and why IT, paired with digital capabilities, can contribute to solving a particular SME problem or expand its reach (Morakanyane et al., 2017) – theory of the solution.

Given that the focus of research is on emerging technology, an explicit effort to anticipate the unintended or negative outcomes of their adoption is a relevant contribution of the IS field. The speed at which technology with disruptive potential is available in the market makes it necessary to understand in advance (1) the possibilities of alternative uses to that which guided the development of the technology, (2) the systemic challenges of its integration in the SME and (3) the threats to information security that the technology entails.

The activities carried out in late 2018 and in 2019 have been aimed at establishing the competence center and initiating collaboration among its members. In this regard, the following efforts have been made:

- The website of the competence center was created and can be accessed from: *https://ccdt.ercis.org/*

- The ERCIS Digital Transformation Lab is in the process of being formalized at the Department of Information Systems of the University of Minho.

PROJECT ACTIVITIES

Several projects were submitted with the collaboration of members from ERCIS, including:

• Cost Action "OPen innovation Excellence Network".

The action was submitted for the third time in September 2019. It aims to advance the understanding of the OI antecedents, hampering factors, and of the challenges present in innovation ecosystems. However, OI is a multi-level phenomenon. Therefore, the Action is structured along three dimensions that describe as many levels of analysis of the OI initiatives: intra-organizational; organizational; inter-organizational. The intra-organizational dimension will focus on the social and cognitive factors pertaining to OI, individually and at group-level. The organizational dimension will explore the factors, tools, and measures suitable to ensure a successful implementation and assess the performance of an OI approach. Finally, the interorganizational dimension will focus on the processes of co-creation that occur in networks of organizations, OI platforms and the initiatives of crowdsourcing and crowdfunding.

The action includes 71 proposers from 32 countries. The proposers from ERCIS are UMINHO, UiA, TalTech, KTU, UMaribor, and UNISG.

• Virtual Open Innovation Lab (VOIL) –

ERASMUS +: KA203 – Strategic Partnerships for higher education. The project aims at developing a curriculum to guide the learning of emerging technologies and assess their potential for innovating and digitally transform Micro, Small and Medium Enterprises – SMEs.

There are 9 project proposers from 7 countries and the members from ERCIS are WWU, UMINHO, KTU and UiA. The project was submitted to the German national agency and approved to start in October 2019.

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DIGITAL TRANSFORMATION

E-GOVERNMENT

The E-Government Competence Center brings together members in the ERCIS network working on digitalization in the public domain. Our research covers a broad range from individuals' use of e-government technology to e-participation to process management.

NRW-CIO Hartmut Beuß during his Keynote

Master's Program Public Sector Innovation and E-Governance (PIONEER)

PIONEER is a joint master program organized by the KU Leuven, the University of Münster and TalTech University Tallinn providing the students with interdisciplinary expertise. The first cohort of PIONEER students successfully completed their studies with the defense of their theses in summer, congratulations!

Graduation of first PIONEER cohort

The second cohort has spent the summer term in Münster, where Sara Hofmann from the University of Agder and Ida Lindgren from the University of Linköping supported the program as guest lecturers. While the second cohort has moved to Tallinn now, the third cohort with 27 students just started in Leuven. We are more than happy, that the program established itself in this way.

Around 450 participants attended MEMO convention

This year's MEMO took place at the ERCIS headquarters in June 2019 and was attended by around 450 participants. MEMO is a convention dealing with e-government topics and bringing together German practitioners and researchers to develop new ideas to modernize the public administration.

Symposium for Information Systems in Public Administration (FTVI 2019)

In March 2019 the Symposium for Information Systems in Public Administration (FTVI 2019) took place in Münster. Around 60 participants from academia and practice visited Münster for two days and discussed recent issues of Public Sector digitization. The proceedings of the symposium are published in Lecture Notes on Informatics.

Study on Citizen Journey

Up to now, the public sector has taken a supply-oriented approach to the design of electronic services for citizens while companies in the private sector have been focusing on demand-oriented service design for years. So-called 'customer journeys', which focus on improving the service experience of customers, are used to better understand the perception of services by customers and to tailor the use of online services to that perception. Especially against the background of the stagnating e-government usage rates in Germany, the necessity for a user-oriented design of public services is tremendous. In a project, researchers from the competence center examine the applicability of customer journeys to the public sector and develop a so-called e-Government Citizen Journey.

Study on Comparing European E-Government Strategies

Large, federal countries such as Germany encounter challenges in their digitalisation of the public sector, which raises the question how Germany can learn from European partners that are already further advanced in this area. The digitisation successes of the Scandinavian countries in particular appear to be ground-breaking in this respect, whereby the question arises as to how far the results can be transferred to German conditions there. Researchers from the competence center take part in a project where they critically analyse the transferability of e-government strategies as well as experiences in their implementation, especially in a direct comparison of Denmark and Germany.

Study on imparting competences in the public sector

New learning formats are becoming increasingly important for imparting electronic competences in the public sector. Existing studies have shown that "gamification", i.e. the acquisition of competences in a playful form, e.g. by simulation, is a promising possibility, since very realistic scenarios and problems can be depicted without exposing the "players" to real-world risks. Employees in public administrations usually only have limited time resources for further training in their daily work, so that a modular or sequential structure of a simulation enables the targeted acquisition of competences in a compressed form. Researchers from the competence center are developing a modular simulation game for competence acquisition in the public sector.

Joint research activities between LUISS and University of Agder

The research collaboration between LUISS, UiA and personal members of the ERCIS networks continues in 2019, focusing on various aspects related to the eGovernment area. Joint research activities are conducted in Rome fall 2019, focusing on participation and decision making in online communities, to understand how collective decisions are made within eParticipation initiatives, based on empirical work related to the Five Star Movement (one of the major political parties in Italy organising most of their activities online). Furthermore, the researchers are also exploring the issue of openness and closeness within this organisation, as well as exploring discussions in social media to explore their deliberative qualities

Research on multi-channel complexity

In spite of massive investment and increased adoption of digital services, citizens continue to use traditional channels to interact with public organizations. The channel choice (CC) field of research tries to understand citizens' interactions with public authorities to make the interaction more efficient and increase citizen satisfaction. Researchers from the competence center have collaborated with researchers from the IT University Copenhagen in a sequential mixed methods study which combines observations of citizen-caseworker interaction in a call center, contextual interviews with callers, and a survey classifying topics from 10,000 telephone calls. Specifically, the study explores the multiplex nature of real-life CC and the problems which cause people to call.

Nadine Ogonek finished her PhD

In 2019, Nadine Ogonek of the E-Government Team in Münster finished her PhD and defended her thesis on e-government competences successfully in November. Congratulations, Nadine!

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ERCIS

Service Science at the
European Research Center for Information Systems

SERVICE SCIENCE

The Service Science Competence Center is ERCIS' primary unit for conducting research and industry projects in the area of service management and service engineering. The team currently consists of two professors and 14 research assistants. The proliferation of the Service Economy has changed the way in which the creation of value is perceived throughout various industry sectors and societies. Selling products is increasingly replaced by customized service offerings and alternative revenue streams (e.g. power by-the-hour). Research in the academic discipline of Service Science, Management and Engineering is focused on understanding and facilitating the creation of value in service systems, involving interactions of service providers and service customers. The mission of the ERCIS Service Science Competence Center is twofold. On the one hand, we strive to understand the nature and impact of service orientation on commercial businesses, the public sector, and society in general. On the other hand, we contribute to further shaping the course of the service economy by designing new business solutions and software artifacts. Our research is equally dedicated to research excellence and to providing results that companies can utilize to further shape their businesses in the service society. We achieve this goal based on a network of excellent researchers in the ERCIS network.

SELECTED RESEARCH PROJECTS
FLEMING

The German energy and climate policy focuses on broad coverage of renewable energies and electric mobility. Therefore, network operators have to face with load fluctuations and even overloading, while being under immense cost and efficiency pressure. The project FLEMING aims to revolutionize the usage of sensors and the continuous supervision of distribution grids. It relies on methods of artificial intelligence (AI) and an improvement in sensor technologies to successfully contribute to the energy and mobility transition. Project partners are Paderborn University, ABB Corporate Research Center, FIR at RWTH Aachen, Karlsruhe Institute of Technology, SÜC Energy, and Heimann Sensor GmbH. The time frame for the project is September 1st, 2019 to August 31st, 2022.

Smart Market Square

The research project smartmarket² uses the innovation potential of digitization to develop new value-added services and applications to strengthen the high streets' attractiveness. It thus offers innovative contributions to preserving and enhancing the character and profile of urban life, which is profoundly shaped by high streets. The project adapts successful e-commerce strategies for high streets to create interactive shopping experiences. The aim is to develop data-driven services and mobile applications that enable digital co-production or co-creation of the shopping experience in high streets. Smartmarket² also creates new data sources on customer behavior that offer analysis potential for science and practice alike.

More information:
https://www.smartmarketsquare.de/

ACADEMIC ACTIVITIES

Martin Matzner and the Chair of Digital Industrial Service Systems at FAU organized the Doctoral Consortium of the 14th Internationale Tagung Wirtschaftsinformatik in 2019 and will also organize it for the 2020 conference. The doctoral consortium offers PhD students the opportunity to discuss their dissertations with renowned researchers and collect their feedback and input.

Daniel Beverungen and his team at the Paderborn University chaired and organized the Service Systems Innovation Conference this year. On April 8th and 9th, more than 300 participants from research and business visited Paderborn to discuss questions such as "How do services advance the digital transformation of the future economy and society?" and many more.

Personal Changes

Karsten Kraume has joined the Service Science Competence Center as Academic Head besides Daniel Beverungen and Martin Matzner.

Editorial Jobs

Daniel Beverungen is Associate Editor of Business & Information Systems Engineering (BISE). Together with Christian Janiesch, he served as Track Chair for Industry 4.0 at the 2019 IEEE Conference on Business Informatics. Additionally, he successfully hosted the track "Service Engineering, Innovation and Management" at the 2019 ECIS Conference in Stockholm, together with Christoph Breidbach and Lysanne Lessard. At the WI 2019 conference, Daniel Beverungen and Christiane Lehrer hosted the track "Digital Transformation and Services".

Martin Matzner is one of the Editors of the Journal of Service Management Research. Together with Jeffrey Parsons, he served as Track Chair for Data-Driven Business Applications at the 2019 IEEE Conference on Business Informatics.

AWARDS

Daniel Beverungen and Verena Wolf have been nominated for the Best Research-in-Progress Paper Award at ECIS 2019.

Jan Betzing, Marco Niemann and Ingo Berendes won the Best Demo Award at the WI 2019.

Several researchers at the Service Science Competence Center have been awarded with Marie-Skłodowska Curie Fellowships of the European Commission.

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Service Conference

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Please contact us for more information on our projects or for starting exciting new initiatives in service science.

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› SMARTER WORK

The Competence Center for Smarter Work studies new ways of working, virtual modes of organizing and organizational transformation based on communication and collaboration technologies.

It provides research and transformation support in the area of Unified Communication & Collaboration (UCC) and Social Media, which facilitate extended and richer modes of interaction among stakeholders. Customer as well as partner relations can be actively transformed by the introduction of UCC and Social Media. Furthermore, tools can be used to improve cooperation among employees, to strengthen social relations or to identify experts and specific information. The integration of these technologies and related concepts into the workplace provides profound challenges and opportunities for organizational development and innovation. We engage in detailed multi method workplace studies in order to gain deep insights into existing work practices. Based on the information and communication patterns and the relationship network of different stakeholders, we suggest scenarios for new work practices and transformation paths. In our scenarios for smarter work we also reflect issues of corporate social responsibilities and employee wellbeing.

Workplace Analytics
(PIs S. Lansmann, S. Schellhammer, J. Hüllmann)

In the project seminar "Workplace Analytics" six master students investigated event log data from Windows 10 machines. The project team collected and analyzed data which is created by default by the operating system, e.g. the login and logoff events. Based on this data it is possible to approximate employee behavior, e.g. to see patterns when employees start and end their workday or how many hours they spent on their machine during the day. Technically, the master students developed a Datawarehouse system to store the anonymized log data accompanied with a frontend, which runs locally as a browser application of the employees and offers individual analytics functionality.

ONGOING RESEARCH INITIATIVES

• Organizational Implications of the Transformation of Individual and Corporate Communication Media Repertoires
(PI Simon Lansmann)

We are currently analyzing the adoption and appropriation of Microsoft Teams within an international systems integrator with over 31.000 employees. Specifically, we investigate how employees integrate the tool into their existing set of communication tools and how Teams is changing the employees' work.

• Enterprise Social Networks and the Dialectics of Collaborative Advantages and Collaborative Overload
(PI Simon Lansmann)

Against the backdrop of the proliferation of Enterprise Social Networks (ESN), we aim at conceptualizing a potential unintended consequence of the increasing share of communication and collaboration activities: collaborative overload. Particularly, we investigate how ESNs are impacting work rhythms which can lead, e.g., to increased fragmentation and acceleration of work.

• Leadership in Online Communities
(PIs Rewat Thapa, Simeon Vidolov)

The project studies leadership and governance structure in Open Source Software communities using the example of Drupal. Extensive collection of digital community communication data (developers' forum) is combined by a theoretically informed analysis of leadership models.

• Automation and the Rise of Hidden Work
(PIs Stefan Klein, Mary Beth Watson-Manheim)

For decades the productivity paradox has drawn the attention of IS scholars and economists alike and continues to do so in light of recent developments in AI. We would like to add another hypothesis to explain the paradox: the growing amount of hidden human work. We define hidden human work as the taken-for-granted and unaccounted-for activities that have seeped into, and in some instances reached a tipping point in, the performance of technology-assisted work. We argue this hidden work is significant and consequential in that the benefits of the technology cannot be realized without skillful performance of these activities.

The deepening of technology into the performance of work activities has occurred as automation has rapidly progressed and increased the entanglement of the human and the technology. Much current "automation" of work systems and activities is actually dependent on human intervention to mediate the process and achieve the objectives ascribed to automation. The jobs of humans have been significantly reconfigured, including such tasks as trouble-shooting robots, as well as taking on other tasks for which robots are not properly designed. Digitalization, or more specifically heteromation, which pushes critical tasks to end users requires reconfiguration of work. Moreover, we argue that many aspects of the reconfigured tasks require significant cognitive work. For example, tasks performed by humans in automated warehouses involve problem solving and analysis, as well as planning and anticipating of non-routine tasks. This often hidden, unaccounted for and little discussed aspect of automation has created additional, increasingly immaterial and individualized human work.

• Sustainable High-Performance Work: Biomarkers and Psychological Mechanisms
(PI Jana Mattern)

In cooperation with SYNK (synk-group.com), a company focused on leadership development, the Competence Center Smarter Work offers the "Sustainable High Performance" program. The program is aimed both at individual executives, who perform above average and who want to make sure that they can sustain their performance in the long run, and at companies that want to offer this program to their executives.

Participants in the program will learn to understand subconscious behavioral patterns and will get an insight into their physiological well-being, assessed through individual bio markers (heart rate variability). Further, concrete stress situations will be simulated and participants will be introduced to innovative methods of stress avoidance and management. In sum, this program provides the fundaments for a professional life that is long, productive and healthy.

• People Analytics
(PI Joschka Hüllmann, Katharina Dassel)

People Analytics (PA), a data-driven, evidence-based approach to managing personnel, has received a lot of attention from practitioners. Moving beyond the hype, we critically examine the nature of PA in the theoretical discourse and consider wider implications of its use, e.g. regarding employee privacy and trust.

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SMARTER WORK

MISDOOM 2019

SOCIAL MEDIA ANALYTICS

The Competence Center Social Media Analytics (CC SMA) deals with challenges due to the rapid and often disruptive evolution of social media technology. The current main research focus of the CC SMA is the misuse of social media technology for disinformation, propaganda, and fake news distribution. The (international) partners approach the topic from the different angles of their respective disciplines: computer science, psychology, statistics, journalism and media, communication science, as well as mathematics.

Besides semi- to fully automatized systems that are able to act on behalf of humans (often called "social bots"), the CC SMA increasingly focuses on the human factor in activities ranging from political campaigning to hate speech. In this context, the University of Münster established a new funded research project together with a local news outlet that strives for the detection of hate speech in online commentary sections.

A new topic addressed by members of the CC SMA (and related to information security research) focuses on economic aspects of disinformation for companies. The current research proposal considers itself as complementary to the state-of-the-art research in data leakage protection and detection: It addresses the consequences of data leakages and their misuse in the context of reputation damaging for companies using social media.

Moreover, the CC collaborates with the joint European initiative CLAIRE, i.e. the Confederation of Laboratories for Artificial Intelligence Research in Europe by providing real-world application scenarios for artificial intelligence approaches.

MISDOOM 2019 Conference in Hamburg

Under the acronym of MISDOOM 2019, the Multidisciplinary International Symposium on Disinformation in Open Online Media was held as a new platform for the international and interdisciplinary exchange of scientific results on the above topic. With support of ERCIS and the CC SMA, this international meeting enabled a multifaceted view on disinformation and established a new scientific forum and innovative outlet. The need for this platform and the overwhelming multidisciplinarity became obvious in the participants of the symposium in Hamburg. Scientists from the multiple disciplines like computer science, social science, psychology, political science, statistics, information systems, and humanities were present. Additionally, many media professionals, governmental and public organizations as well as representatives of non-governmental organizations participated.

At MISDOOM 2019, fifteen research groups presented their work in scientific sessions. The topics ranged from populism and conspiracy over propaganda as well as fake and hate detection towards technical aspects like social bots and infrastructures. The scientific program was framed by five invited keynotes given by André Calero Valdez (University of Aachen), Greg Barber (Washington Post), Juliane von Reppert-Bismarck (Project Lie Detectors), Stefano Cresci (IIT-CNR, University of Pisa), and Christian Stöcker (HAW Hamburg).

PUBLICATIONS

As a result of scientific cooperation during 2019 – especially also in the context of MISDOOM 2019 – the members of the competence center published several articles and working papers.

Dennis Assenmacher, Lena Adam, Lena Frischlich, Heike Trautmann & Christian Grimme (2019). Openbots – An Empirical Study on Automated Programs in Social Media. eprint arXiv:1902.06691.

Svenja Boberg, Lena Frischlich, Florian Wintterlin, Tim Schatto-Eckrodt & Thorsten Quandt (2019). Between Overload and Indifference. Detection of Fake Accounts and Social Bots by Community Managers. Proceedings of the Multidisciplinary International Symposium on Disinformatioon in Open Online Media, Hamburg, Springer LNCS, in print.

Tim Schatto-Eckrodt, Svenja Boberg, Florian Wintterlin & Thorsten Quandt (2019). Use and Assessment of Sources in Conspiracy Theorists' Communities. Proceedings of the Multidisciplinary International Symposium on Disinformation in Open Online Media, Hamburg, Springer LNCS, in print.

Lena Adam, Lena Frischlich, Heike Trautmann & Christian Grimme (2019). Automated Detection of Nostalgic Text in the Context of Societal Pessimism. Proceedings of the Multidisciplinary International Symposium on Disinformation in Open Online Media, Hamburg, Springer LNCS, in print.

Lena Frischlich, Niels Göran Mede & Thorsten Quandt (2019). The Markets of Manipulation: The Trading of Social Bots on Clearnet and Darknet Markets. Proceedings of the Multidisciplinary International Symposium on Disinformation in Open Online Media, Hamburg, Springer LNCS, in print.

Dennis Assenmacher, Lena Adam, Lena Frischlich, Heike Trautmann & Christian Grimme (2019). Inside the Tool Set of Automation: Free Social Bot Code Revisited. Proceedings of the Multidisciplinary International Symposium on Disinformation in Open Online Media, Hamburg, Springer LNCS, in print.

Philipp Kessling & Christian Grimme (2019). Analysis of Automation in Account Engagement for Onsetting Twitter Message Cascades. Proceedings of the Multidisciplinary International Symposium on Disinformation in Open Online Media, Hamburg, Springer LNCS, in print.

Tim Schatto-Eckrodt, Svenja Boberg, Florian Wintterlin, Lena Frischlich & Thorsten Quandt (2019). Bedrohte Deliberation: Information Warfare und Desinformation als Bedrohung digitaler Öffentlichkeiten. Communicatio Socialis, 52(2), 147-158. doi: 10.5771/0010-3497-2019-2-147.

Thorsten Quandt, Lena Frischlich, Svenja Boberg & Tim Schatto-Eckrodt (2019). Fake news. In Vos T P, Hanusch F (Eds.), The International Encyclopedia of Journalism Studies. Wiley. doi: https://doi.org/10.1002/9781118841570.iejs0128.

Lena Frischlich, Svenja Boberg & Thorsten Quandt (2019). Comment sections as targets of dark participation? Journalists' evaluation and moderation of deviant user comments. Journalism Studies.

MEDIA

Media featuring members of the group covered the topic of the CC SMA. The following provides a selection of this media coverage:

ZDF heute.de (April 2019): Interview with Mike Preuss (university of Leiden) on the working principles of social bots in the context of the European election.

NDR, ZAPP (Mai 2019): Interview with Thorsten Quandt on online propaganda and the approaching election of the European Parliament.

ACTIVITIES

Since the end of 2018, Christian Grimme is an academic member of the Integrity and Security Initiative of the German Federal Office for Information Security and the German Federal Ministry of Interior.

UPCOMING EVENTS

- The CC SMA supports the upcoming Multidisciplinary International Symposium on Disinformation in Open Online Media held in Leiden, The Netherlands, during April 2020. The symposium will continue the successful first edition of MISDOOM in conjunction with the European RISE_SMA consortium.

- The CC SMA will also organize a parallel session on "Data, Algorithms, and Humans in Digital Manipulation" at the Human Computer Interaction International Conference in Kopenhagen, 2020.

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NETWORK RESEARCH ACTIVITIES

ERASMUS+ PROJECT:
EXPLORATIVE BUSINESS PROCESS MANAGEMENT

Explorative BPM

The University of Liechtenstein is leading an Erasmus+ funded project on explorative business process management (BPM). In cooperation with the Vienna University of Economics and Business and the University of Bayreuth, a reference module is developed that covers different aspects of explorative BPM. This is important because companies operate in a dynamic environment which requires process efficiency while at the same time, it offers opportunities for innovation. Particular focus is placed on the role of digital technologies. The project will result in a reference module including a set of various lectures and recommendations on how explorative BPM can be taught in Europe and beyond.

ERASMUS+ PROJECT:
TEXT MINING FOR CURRICULUM DESIGN

Text Mining

The University of Liechtenstein (project lead), the University of Münster and the National University of Ireland are working together on the Erasmus+ funded project "Text Mining for Curriculum Design for Multiple Information Systems Disciplines". Traditionally, curriculum design is performed manually by academics with years of experience in the design process. Decisions about content and competences are often made based on highly subjective impressions of individuals. The discipline of data science, in particular text mining, offers new opportunities to support the curriculum design process by using the abundance of information available such as job ads from industry, curricula from various academic institutions through semi-automatic means due to the immense volume of information. The methodology that this project will develop and make available to the public could therefore facilitate curriculum design in other disciplines across Europe as well.

ERASMUS+ PROJECT:
BUSINESS PROCESS MANAGEMENT
AND ORGANIZATIONAL THEORY

The University of Liechtenstein, the Vienna University of Economics and Business, the University of Cologne and Radboud University have successfully acquired a new Erasmus+ funded project on Business Process Management (BPM) and Organizational Theory. The project is led by Assistant Professor Thomas Grisold (University of Liechtenstein) and addresses the question of how we can combine theories and methods from the organizational studies into BPM. This question is important because both fields are concerned with process work in organizations but they look at it from different perspectives and with different premises. This project will result in a transdisciplinary curriculum which enables aspiring business process managers to take a more holistic view on business processes and routines.

ERASMUS+ PROJECT – VOIL:
VIRTUAL OPEN INNOVATION LAB

University of Minho lead the effort to develop an ERASMUS+ project proposal – VOIL: Virtual Open Innovation Lab that was submitted to the call of the KA203 – Strategic Partnerships for higher education. The project aims at developing a curriculum to guide the learning of emerging technologies and assess their potential for innovating and digitally transform SMEs. Together with the curriculum, guidelines will be produced to help defining a digital transformation strategy and a platform will be developed to support simulation-based learning of technologies such as Internet of Things, BlockChain and Intelligent Systems. The project was approved and it has had the kick-off meeting on the 4th and 5th November, 2019. The project is coordinated by University of Muenster and includes 9 partners in a total of 7 European countries. Three other partners belong to ERCIS: Kaunas University of Technology, University of Agder and University of Minho.

COST PROPOSAL – OPEN INNOVATION
EXCELLENCE NETWORK

Some members of the ERCIS Network participated in the development of a COST proposal – OPen innovation Excellence Network, which was re-submitted again in last August. The second evaluation was very positive and received in most parameters the highest score. Therefore it was decided to address the few weaknesses highlighted in the second evaluation. The proposed Action aims to advance the understanding of the OI antecedents, hampering factors, and of the challenges present in innovation ecosystems. The Action is structured along three pillars that describe as many levels of analysis of the OI initiatives: intra-organizational; organizational; inter-organizational. The COST Action was proposed by 71 institutions of 32 countries. The ERCIS partners involved in this collective effort are University of Minho, Tallinn University of Technology, National University of Ireland Galway, Kaunas University of Technology, University of Agder and University of Maribor.

EU PROPOSAL SMARTFORMS

University of Minho participated in the effort of developing the proposal – SMARTFORMS – Personalized, adaptive and self-learning user interfaces for data exchange in digitized public administrations, submitted to H2020-SC6-TRANSFORMATIONS-2019. This was a collaborative effort done by 15 partners, some of which members of ERCIS. The proposal was not accepted for funding but there is a common interest in improving it and resubmit.

EU PROPOSAL WIND

University of Minho also participated in the effort of developing the proposal: WIND – Workplace Innovation Networking for Digitalization in SMEs – A Norwegian EUWIN – proposal, submitted to H2020-INNOSUP-2018-2020, Topic: INNOSUP-04-2019. The proposal was submitted by the University of Agder. It was not accepted for funding.

Erasmus+ Treffen in Norwegen

ERASMUS+ PROJECT:

VIRTUAL REALITY IN HIGHER EDUCATION:

APPLICATION SCENARIOS AND

RECOMMENDATIONS

Since 2018, the Institute of Information Systems of the University of Liechtenstein leads an Erasmus+ project focusing on the use of virtual reality (VR) in higher education. Together with the ERCIS partners University of Duisburg-Essen (Stefan Stieglitz) and University of Agder (Tim A. Majchrzak) and the associated partners (University of Münster, University of Nebraska Omaha), first promising results have been identified, which show great potential for VR-enhanced education practices. Based on literature and market analyses, current VR practices in education have been identified.

Additionally, based on three design thinking workshops, students and lecturers identified together several innovative application scenarios for the use of VR in class. Currently, the project partners plan to implement and test first VR prototypes in university courses. In the end, the project's aim is to provide recommendations and guiding material on the use of VR in higher education.

Erasmus+ in Duisburg

Erasmus+ Projekttreffen in Liechtenstein

Researchgate: *https://www.researchgate.net/project/Virtual-Reality-in-Higher-Education-Application-Scenarios-and-Recommendations*

Twitter: *https://twitter.com/VRHighEducation*

Twitter Handle: *@VRHighEducation*

**MASTIS PROJECT –
ESTABLISHING MODERN MASTER-LEVEL STUDIES
IN INFORMATION SYSTEMS – COMPLETED**

**JOINT PROJECTS BY LUISS, UNIVERSITY
OF AGDER, AND PERSONAL MEMBERS OF
THE ERCIS NETWORK**

The joint project focusing on public sectors´ role within the sharing economy was initiated back in 2018, and continued also in 2019. Participants included Alessio Braccini and Stefano Za from LUISS, as well as Sara Hofmann and Øystein Sæbø from University of Agder. Activities included several research visits, as well as dissemination activities presenting the results of the research. Results from this work have so far been published at the IFIP WG 8.5 IFIP Electronic Participation (ePart) (in 2018) and in the Information Government Journal in 2019.

References for joint papers:

Hofmann, S.; Sæbø, Ø.; Za, S. and Braccini, A. M. (2018). Exploring Public Sector's Roles in Collaborative Consumption–A Research Agenda. In International Conference on Electronic Participation (pp. 103–114). Springer, Cham.

Hofmann, S.; Sæbø, Ø.; Braccini, A. M. and Za, S. (2019). The public sector's roles in the sharing economy and the implications for public values. Government Information Quarterly.

The last working meeting of the international MASTIS project of European programm ERASMUS+ at Vinnitsa National Technical University

The research project "Establishing Modern Master-level Studies in Information Systems" (MASTIS) was recently completed. The project consisted of a large consortium of nine European universities, led by the University Lyon 2 (France), seven Ukrainian and two Montenegrin universities. The main aim of the project was to improve Master Programmes in Information Systems according to the needs of the modern society; to bring the universities closer to changes in global labour market and world education sphere; to enable them to stay responsive to employers' needs; to give students an idea of various job profiles in the Information System domain; to ensure employability throughout graduates' professional and soft skills.

In practice, the MASTIS project successfully developed a new master programme in Information Systems based on the expertise and knowledge gained from existing research, project work,

expert knowledge of the EU partners and specific needs of the Ukrainian and Montenegrin requirements. As part of the project work, the developed master programme was piloted and now implemented in all of the Ukrainian and Montenegrin universities.

Therefore, MASTIS reached its goal to enable the partner countries & EU universities to modernize Information System education based on the student-oriented principals, strong university-enterprise cooperation and modern approaches to the education.

Finally, the programme will give the partner countries universities an opportunity to prepare competitive specialists for Ukrainian, Montenegrin and the global labour market.

**GENDER EQUALITY IN INFORMATION
SCIENCES AND TECHNOLOGY RESEARCH
INSTITUTIONS WITH THE EQUAL-IST
PROJECT**

EQUAL-IST ("Gender Equality Plans for Information Sciences and Technology Research Institutions") was an international project funded by the European Commission (EC) within the Horizon 2020 Framework Programme. The project started in June 2016 and was successfully completed after its final review in July 2019. The project was aimed at introducing structural changes to enhance gender equality, diversity, and work-family balance at the six participating Information and Communications Technology (ICT) and Information Sciences and Technology (IST) research institutions. It has been demonstrated that ICT and IST belong to the fields, where gender inequalities at all levels can be observed.

The project consortium was formed by such ERCIS member institutions as the University of Münster (Münster, Germany), the University of Turku (Turku, Finland), Kaunas University of Technology (Kaunas, Lithuania), the University of Minho (Guimarães, Portugal), and Simon Kuznets Kharkiv National University of Economics (Kharkiv, Ukraine). Two further research institutions included Ca' Foscari University of Venice (Venice, Italy) and the University of Modena and Reggio Emilia (Modena, Italy). The project was coordinated by the ViLabs company (Thessaloniki, Greece).

EQUAL-IST Group

The following key activities were performed within the project:

First, best practices were collected in order to inform the further course of action. For that, the analysis of related projects aimed at the promotion of gender equality in research institutions was performed.

Second, internal gender audits were conducted at the participating research institutions. The objectives here were to reveal (1) the specific challenges related to gender equality, diversity, and work-family balance that each institution faced, as well as (2) the promising initiatives to address each of the identified challenges.

Third, tailored Gender Equality Plans (GEPs) were designed for each research institution in a participatory manner and approved by respective decision-makers. This process was facilitated by the Crowd-Equality idea crowdsourcing platform *(www.crowdequality.eu)*, which was developed by the team of eight Bachelor students studying Information Systems at the University of Münster. The designed GEPs contained detailed action plans for each of

the selected initiatives aimed at addressing the identified challenges.

Finally, the designed GEPs were implemented in two iterations. The implementation progress and success were continuous assessed and reported on both internally and by an external evaluator appointed for the EQUAL-IST project. The internal assessment was focused on the performed work, while the external assessment – on the impact of this work. Based on the outcomes of the 1st iteration of GEP implementation and the feedback received from the project external evaluator, the initial GEPs were refined and then implemented further during the 2nd iteration.

Further work packages of the EQUAL-IST project included project management, dissemination of all project activities, as well as ensuring that the ethics requirements set by the EC were fulfilled. All project deliverables were submitted in a timely manner and approved by the EC.

For further information please visit: *www.equal-ist.eu*

NETWORK RESEARCH ACTIVITIES

Research collaboration between UiA and UDE

EU-PROJECT RISE_SMA –
SOCIAL MEDIA ANALYTICS FOR SOCIETY
AND CRISIS COMMUNICATION

https://social-media-analytics.org

ERCIS partners from University of Duisburg-Essen, University of Leiden, University of Agder and Queensland University of Technology successfully applied for 1,2 million Euro EU funding. Coordinated by Prof. Dr. Stefan Stieglitz, the project members form an interdisciplinary, international network combining excellent scholars and practitioners to enable vigorous knowledge sharing and to develop solutions for contemporary challenges for Social Media Analytics.

Advanced theoretical approaches and methods of analysing social media data are especially relevant for the two domains addressed in RISE_SMA: society and crisis communication. During the runtime of the project from 2019–2023, prototypes will be developed, methods will be improved and ethical questions will be discussed among the participants.

RISE_SMA Kick-Off Meeting in April 2019

The topical cornerstones of the project consider how we can better extract and disseminate information using social media in critical situations such as natural and human-made disasters, but also during social movements and prior to political elections. Moreover, the project pursues the aim to standardize procedures how to ethically process social media data and safeguard the rights and freedoms of data subjects while answering pressing research questions. To this end, the project consortium works in close cooperation with the European Commission to reconcile important research and the also crucial data protection measures specified in the General Data Protection Regulation (GDPR).

In order for the project to be beneficial for everyone, RISE_SMA puts into practice a gender and diversity action plan, which, among other things, allows family-friendly secondments (30-day trips to project partners). In order to implement this action plan, the coordinators Prof. Dr. Stefan Stieglitz and Julian Marx become permanent members of the ERCIS SIG "Gender Equality":

https://www.ercis.org/about-us/ competence-centers/ercis-sig-gender-equality

As a social media research project, RISE_SMA pays close attention to making research results visible to a broader audience that exceeds the scientific community. To this end, the project keeps a lively Twitter feed that features members of the network while traveling to project partners:

https://twitter.com/rise_sma

RISE_SMA project meeting

Apart from Twitter, the project curates a website and blog. The website provides evergreen information about the project, whereas the blog provides fist-person reports from seconded researchers and practitioners that make use of the RISE_SMA network:

https://social-media-analytics.org/blog/

JOINT RESEARCH BETWEEN WAIKATO
AND MÜNSTER

Joint Research on Automated Configuration of Stream Clustering Algorithms of the Information Systems and Statistics Group (Münster) with the Computer Science Department, University of Waikato, New Zealand resulted in a joint publication: Carnein, M., Trautmann, H., Bifet, A., & Pfahringer, B. (2019). Towards Automated Configuration of Stream Clustering Algorithms. In Proceedings of the European Conference on Machine Learning and Principles and Practice of Knowledge Discovery in Databases (ECMLPKDD '19), Würzburg, Germany.

SUPPLY CHAIN HACKATHON
AT THE UNIVERSITY OF TWENTE

In January 2020, for the seventh time, the supply chain hackathon will be organized this time in the headquarters of the land registry (Kadaster). Several teams compete developing creative solutions based on open and closed data that several companies contributed. A jury of academics and business representatives awarded a 1000 euros to the best performing team.

VISITING RESEARCHERS PROGRAMME
AT THE UNIVERSITY OF TWENTE

In 2019, positions were created for visiting researchers in the area of Business Information Systems at the University of Twente for short visits from two to twelve weeks. ERCIS members are especially invited to spend a research visit in Twente. Research visits are open for junior and senior IS faculty.

JOINT JOURNAL PUBLICATION BY
LEIDEN UNIVERSITY AND WWU MÜNSTER

The research collaboration of Leiden University and WWU Münster on the topic of multimodal multiobjective optimization led to a new paper in conference proceedings. New insights on how to find extremal points in multiobjective optimization were summarized in a conference contribution to the LeGO 2018 – Global Optimization Workshop (AIP, web of science proceedings):

Grimme, C., Kerschke, P., Emmerich, M. T., Preuss, M., Deutz, A. H., & Trautmann, H. (2019, February). Sliding to the global optimum: How to benefit from non-global optima in multimodal multi-objective optimization. In AIP Conference Proceedings (Vol. 2070, No. 1, p. 020052). AIP Publishing.

NETWORK RESEARCH ACTIVITIES

In January 2019, four scientists from WUST visited Münster. In return, one invited lecture was delivered by Leschek Homann and Denis Martins from DBIS Group in June 2019.

JOINT PROJECT BY WUST AND WWU
(second year of collaboration)

The use of Recommender Systems has improved online markets in several aspects by promoting individual personalization of offers and contents, helping customers to find desired products, enhancing discovery of novel or unexpected items, and improving customer loyalty. For providing such a personalization, it is essential to gather information about the individual or user community such as their interests, goals, behaviors, and preferences. Capitalizing on that, in the last two years, the Department of Information Systems at the Wroclaw University of Science and Technology and the DBIS Group of the University of Münster collaborated in the project "Deep Recommendation based on Collective Knowledge", which aims to investigate whether the collective knowledge of user communities could extend personalization in Recommender Systems.

As a result of this collaboration, a series of papers have been produced and presented in international conferences. Some of the ideas covered in the project involve the enhancement of traditional recommendation systems with social network-based information, personalized recommendations for data purchase, and automatic web interface design recommendation.

References for published joint papers:

- *Leschek Homann, Bernadetta Maleszka, Denis Mayr Lima Martins, Gottfried Vossen:* A Generic Framework for Collaborative Filtering Based on Social Collective Recommendation. ICCCI (1) 2018: 238-247. DOI: 10.1007/978-3-319-98443-8_22

- *Marek Krótkiewicz, Krystian Wojtkiewicz, Denis Martins:* Influence Power Factor for User Interface Recommendation System. ICCCI (1) 2018: 228-237. DOI: 10.1007/978-3-319-98443-8_21

- *Denis Mayr Lima Martins, Gottfried Vossen, Marcin Maleszka:* Supporting Online Data Purchase by Preference Recommendation. SMC 2018: 3703-3708. DOI: 10.1109/SMC.2018.00627

- *Marcin Maleszka, Bernadetta Maleszka, Dariusz Krol, Marcin Hernes, Denis Mayr Lima Martins, Leschek Homann, and Gottfried Vossen:* A Modular Diversity Based Reviewer Recommendation System. ACIDS 2020: pending.

AUREAS:
AUGMENTED REALITY SUPPORT
FOR DECISION-MAKING IN CRISIS
MANAGEMENT

Funded by the German Academic Exchange Service (DAAD), ERCIS partners from University of Duisburg-Essen (Stefan Stieglitz) and University of Agder (Tim A. Majchrzak) cooperate to develop and evaluate a prototypical Augmented Reality (AR) decision-making support system for crisis management. The project particularly focuses on the potential of AR for enhancing the integration of social media data into decision-making processes. The developed prototype will be evaluated with emergency management professionals at the Centre for Integrated Emergency Management (CIEMLab) at the University of Agder in Norway.

Researchgate:

https://www.researchgate.net/project/ Augmented-Reality-Support-for-Decision- Making-in-Crisis-Management-AUREAS

The visiting program for international faculty (VIP program) is part of the School of Business and Economics' (Münster University) internationalization strategy. It aims at providing a framework to institutionalize existing visiting activities and to attract new international faculty for long-term affiliations with the School. The VIP program provides different options for international faculty to engage in teaching, research and PhD supervision activities. Students benefit from the experience and expertise of renowned international visiting scholars ("internationalization at home"). At the same time, the English taught program of the School is being systematically developed through the involvement of international guests.

Prof. Chris Holland is a VIP associated with ERCIS. ERCIS is looking for outstanding professors with a proven research record to enrich our research as well as for early career faculty (Post-Docs, Assistant Professors) to work with research groups or to take over dedicated teaching assignments. ERCIS head office welcomes professors whose research fits into the research agenda of individual colleagues and who are willing to spent time in Münster for in-depth engagement with ongoing research activities, teaching responsibilities on a regular basis and mentoring for PhD candidates. If you are interested in the Münster visiting program just contact Prof. Heike Trautmann, vice dean for internationalization, *(heike.trautmann@uni-muenster.de)*.

Liechtenstein students during their Vienna trip

STUDY TRIP TO VIENNA 2019

In April 2019, around 20 students of the Master's programme in Information Systems of the University of Liechtenstein travelled to Vienna together with Dr. Leona Chandra Kruse, Assistant Professor at the Institute for Information Systems of the University of Liechtenstein. They attended lectures on "Process Mining" given by Prof. Dr. Jan Mendling at the Vienna University of Economics and Business, visited companies and did some sightseeing. The study trip offered the students a unique opportunity to get to know the capital of Austria and the campus of WU Vienna.

INITIATIVE OF JOINT TEACHING IN TWENTE AND MÜNSTER

Faculties of Twente and Münster collaborate to explore joint programmes in Data Science. Several meetings have been held to explore this initiative. Also joint and double degrees of existing bachelor programmes are explored.

EIGHTH LIECHTENSTEIN WINTER SCHOOL IN BUSINESS PROCESS MANAGEMENT, DATA SCIENCE, AND DATA AND APPLICATION SECURITY

Winter School

This year, the Liechtenstein Winter School, organized by the Institute for Information Systems, took place for the eighth time. Bachelor students from all over the world, including Australia, attended lectures on Business Process Management, Data Science and Data & Application Security at the University of Liechtenstein. The students applied the new content in case studies and exercises. The lessons were designed in cooperation with the University of Münster. A company visit to Hilti AG in Schaan and a sledging trip to Malbun rounded off the program.

PHD SEMINAR AT FLUMSERBERG

For the sixth time, the University of Liechtenstein organized a ski seminar for PhD students. The seminar took place at Flumserberg and was led by Prof. Dr. Stefan Seidel, University of Liechtenstein, Prof. Dr. Nicholas Berente, University of Notre Dame, Prof. Dr. Roland Holten, Goethe University Frankfurt, Prof. Dr. Jan Mendling, Vienna University of Economics and Business, and Prof. Dr. Christoph Rosenkranz, University of Cologne. Twelve PhD students from different universities presented their PhD research projects and discussed current topics of Information Systems research. Joint ski tours guaranteed an unforgettable experience for all participants.

COOPERATIVE TEACHING BETWEEN THE UNIVERSITY OF LIECHTENSTEIN AND SEVERAL ERCIS PARTNERS

As part of the University of Liechtenstein's master's programme in Information Systems, Prof. Dr. Gottfried Vossen, Denis Martins, Dr. Armin Stein (University of Münster), and Prof. Dr. Jan Mendling (WU Vienna) visited the University of Liechtenstein, where they delivered lectures for the students.

Prof. Dr. Jan vom Brocke from the University of Liechtenstein is Adjunct Lecture at the University of St. Gallen and Adjunct Professor at the National University of Ireland Galway. Further, Prof. Dr. Stefan Seidel (University Liechtenstein) delivered lectures on Green Information Systems at the National University of Ireland in Galway.

Design Thinking in VR

WORKSHOP DESIGN THINKING IN THE VIRTUAL REALITY

In October 2019, the Institute of Information Systems invited several experts from practice and research, also from the ERCIS network, to the University of Liechtenstein to participate in a Design Thinking workshop. Together, we developed application scenarios and requirements on how to use Virtual Reality in Design Thinking in the context of Business Process Management. As part of the Design Thinking Challenge, all participants played a warm-up game in virtual reality, conducted interviews with local companies, generated solution ideas, and finally prototyped their favourite solution.

PIONEER'S THIRD COHORT HAS JUST STARTED

pioneer

Since 2017, the University of Tallinn has been jointly offering with KU Leuven (the coordinator) and the University of Münster the innovative 120 ECTS joint master programme Erasmus Mundus Master of Science in Public Sector Innovation and e-Governance (PIONEER). The general idea behind this master programme is that the public sector needs interdisciplinary expertise in order to be able to fully benefit from the potential of ICT and technological innovations. The program prepares experts with knowledge of both Public Administration and ICT and who, taking into account the context-specific factors, can implement a variety of technological solutions for the information society, public services and improving the efficiency of Public Administration. Graduates should be able to see the opportunities and threats of different public sector innovations as well as the essence of egovernance.

The programme has received funding from the European Commission. All 16 students from the first cohort have successfully finished the programme last August after writing their Master Thesis at one of the three universities or within a company context. The second cohort (25 students from 18 different countries) has just moved to Tallinn for their third semester, while the students of the third cohort – with 27 students from 22 countries the biggest and most diverse group so far – started their journey in Leuven.

ERCIS PHD COLLOQUIUM 2019

In 2019, the ERCIS again organised a PhD Colloquium in Pto. Pollensa, Spain. The rationale of this series is to intensively discuss the PhD endeavour of each participant, provide multi-perspective feedback, network them, and enjoy the time together in a nice environment.

The PhD candidates had to submit an eight to ten pages dissertation paper, summarizing motivation, related work, problem statement/research gap, proposed research approach and time frame. Furthermore, each of the students had to conduct a peer review of one dissertation paper.

At the venue, the candidates had to present their research for approximately 30 minutes without any means but a whiteboard and pens, leaving at least an hour for discussion. Additionally, the students had to moderate the session of the paper they reviewed. This gave eight students the opportunity to participate: Dennis Assenmacher, University of Münster; Frank Danielsen, University of Agder; Chris Gernreich, Ruhr-Universität Bochum; Steven Groß, Wirtschaftsuniversität Wien; Brigida Moucho, Universidade do Minho;

Tiemo Thiess, IT University of Copenhagen; Sharon Wagg, Loughborough University; Rainer Winkler, Universität St. Gallen.

This year, the faculty board consisted of Katrin Bergener, University of Münster; Alessio Maria Bracini, Università degli Studi della Tuscia; Sara Hofmann, University of Agder; Oliver Müller, Universität Paderborn; Jens Pöppelbuß, Ruhr-Universität Bochum; Armin Stein, University of Münster.

Aside from discussing the research, the participants also used the chance to either learn sailing together, or to advance their nautical knowledge. This resulted in a great team spirit, leveraging the idea of the network to our junior scholars. The 2020 DC will again take place June 27-July 4.

For more information, have a look at
http://www.erc.is/go/dc

TESTIMONIAL: SHARON WAGG, UNIVERSITY OF LOUGHBOROUGH

Throughout my PhD at Loughborough University I have always strived to make the most of opportunities and take them when I can. So, when I was encouraged by my supervisors Professor Louise Cooke and Dr Boyka Simeonova to apply for the European Research Centre for information Systems Doctoral Consortia (ERCIS DC) I jumped at the chance. The ERCIS DC was a very timely experience at this stage of my PhD and was incredibly useful to present to a supportive, yet critical audience. The experience of combining a week-long sailing course with presenting and discussing research with PhD students and academics from across Europe will undoubtedly be amongst the highlights of my PhD journey. The DC built a great team spirit and a lasting legacy and I would highly recommend this to fellow PhD students.

ERCIS ADVISORY BOARD GETS TOGETHER IN THE GREENHOUSE TO DISCUSS CURRENT TRENDS

On 30th October 2019 the 13th advisory board meeting of the European Research Center for Information Systems (ERCIS) took place in the CLAAS Greenhouse. The 30 visitors, among them renowned professors of economics and information systems of the universities Muenster and Paderborn and representatives from the advisory board member companies such as Hilti Corporation, SAP, zeb, Arvato Supply Chain Solutions and many others, came to Harsewinkel for the annual meeting to discuss current trends and challenges.

After the welcome by Michael Hyllan (VP Human Resources Germany), Wolf von Wendorff (Head of Digitalization and Processes BUSS), who has been driving the cooperation professionally for years, presented how digitization is changing agriculture. This was followed by conference topics on University Relation and Talent Acquisition, Automation and Preventive IT Operations through Analytics, Prediction and AI as well as the digital challenge in the eMobility context. The conference was embedded in a framework program includ-

ing a factory tour of the main CLAAS plant in Harsewinkel and a visit of Hof Loermann.

CLAAS has been a member of the ERCIS advisory board since 2016. Hereby a symbiosis of interests from the Digitalization and Processes BUSS and HR departments emerges, as the membership enables CLAAS to make exclusive contact with students and professors from the Information Systems department at the University of Münster and at the same time to help shape the research program. A successfully completed group-wide project was a click dummy, which was used as a prototype in a current service project. In addition, a joint Design Thinking Workshop was offered as part of the cooperation this

year, in which international students from Münster and the University of West Georgia (USA) focused not only on elaborating the content of the question, but also on learning creative methods.

If you have any questions on cooperation, please contact Lennart Haack (Manager Digitalization and Processes BUSS at CLAAS Global Sales GmbH) who represents CLAAS on the advisory board together with Wolf von Wendorff (Head of Digitalization and Processes BUSS) since 2018.

Further information is available here:
https://www.ercis.org/about-us/advisory-board

ICCCI 2019 – 11TH INTERNATIONAL CONFERENCE ON COMPUTATIONAL COLLECTIVE INTELLIGENCE

The 11th International Conference on Computational Collective Intelligence (ICCCI 2019) was held in Hendaye, France, September 4–6, 2019. The conference was co-organized by the French SIGAPP Chapter (ACM Special Interest Group on Applied Computing), the LIUPPA (Laboratoire d'Informatique de l'Université de Pau et des Pays de l'Adour), France, and the Wrocław University of Science and Technology, Poland. The conference was run under the patronage of the IEEE SMC Technical Committee on Computational Collective Intelligence.

We received more than 200 submissions from 41 countries all over the world. Each paper was reviewed by two to four members of the international Program Committee (PC) of either the main track or one of the special sessions. Finally, we selected 117 best papers for oral presentation and publication in two volumes of the Lecture Notes in Artificial Intelligence series.

Around 60 delegates from Europe, Africa and USA participated in the two day event at the University of Agder.

CENTERIS/PROJMAN 2019 IN TUNISIA

On October, 16th to 18th, the colocated conferences CENTERIS and ProjMAN took place in Sousse and Tunis. During the 3-day conferences, under the leitmotiv of Enterprise Information Systems and Project Management respectively, academics, scientists, IT/IS professionals, managers and solution providers from all over the world had the opportunity to share experiences, bring new ideas, debate issues, and introduce the latest developments in the largely multidisciplinary field. Several ERCIS partners were involved as committee members.

http://centeris.scika.org

JOBHUB IT IN MÜNSTER

On May 14 and on November 5, the Jobhub IT, the IT job fair of the University of Münster, has been organized at the University with 20 participating companies – including ERCIS advisory board members – from the Münsterland region.

ENABLING TECHNOLOGIES IN HUMANITARIAN SUPPLY CHAINS

The Centre for Integrated Emergency Management (CIEM) at the University of Agder together with the European Working Group on Humanitarian Logistics (coordinated by several ERCIS partner institutions) organized the fourth EURO HOpe mini-conference on September 5-6, 2019. The conference theme was Enabling Technologies in Humanitarian Supply Chains.

The EURO HOpe Working Group serves as a forum for communication among parties working in Humanitarian Operations. Focus areas within humanitarian supply chains span to include refugees and migration, health, conflicts and natural disaster. The conference presentations and panels covered topics such as modeling and simulation of humanitarian supply chains, the possible role of big data analytics and artificial intelligence, and innovation and technology management in humanitarian operations.

Participants from the University of Münster at the IEEE Conference on Business Informatics in Moscow

21ST IEEE CONFERENCE ON BUSINESS INFORMATICS IN MOSCOW

From July 15th to 17th, 2019, the 21st IEEE Conference on Business Informatics took place in Moscow. The event was organized by the HSE School of Business Informatics of the Faculty of Business and Management.

It was the first time that the conference was held in Russia. The main topics of the conference were dedicated to digital transformation, modern digital technologies, and their impact on business development. The Programme Committee of the conference included over 200 Russian and international experts in business informatics. Dmitry Novikov, Director of V.A. Trapeznikov Institute of Control Sciences (RAS), and

Jörg Becker, Professor at the University of Münster, and HSE Honorary Professor, chaired the conference's Programme Committee. Professor Svetlana Maltseva, Head of the HSE School of Business Informatics, and Professor Ulrich Frank, Chair of Information Systems and Enterprise Modelling, University of Duisburg-Essen (Essen, Germany) were general chairs of the Organizing Committee. Mikhail Komarov, Deputy Head of the School of Business Informatics, chaired the Organizing Committee. Vasily Kornilov, Deputy Head of the School of Business Informatics co-chaired the committee.

https://bi.hse.ru/en/news/308285679.html

ERCIS@ECIS

As the European Conference on Information Systems (ECIS) took place in Stockholm, Sweden, in June 2019, ERCIS members met at Knut Bar in central Stockholm to have a chat with fellow colleagues.

We are already looking forward to our next ERCIS@ECIS meeting in Marrakech, Morocco next year!

MULTIDISCIPLINARY INTERNATIONAL SYMPOSIUM ON DISINFORMATION IN OPEN ONLINE MEDIA (MISDOOM), FEBRUARY, 27 – MARCH 01, 2019, HAMBURG (HAW), GERMANY (SPONSORED BY ERCIS)

The first edition of the Multidisciplinary International Symposium on Disinformation in Open Online Media (MISDOOM) in Hamburg was a great success. More than 70 scientists from multiple disciplines (computer science, communication science, political science, media science, and journalism), practitioners, think tanks, and governmental officials met for an inspiring exchange of insights and ideas. The program comprised international keynotes from André Calero Valdez (RWTH Aachen University), Greg Barber (Washington Post), Stefano Cresci (University of Pisa), Juliane von Bismarck-Reppert (Lie Detectors), and Christian Stöcker (HAW Hamburg) as well as a scientific program with current research results in the context of disinformation.

More information as well as a complete video stream of the symposium is available at: *www.misdoom.org*

Blockchain Forum in Vienna

WIRTSCHAFTS
UNIVERSITÄT
WIEN VIENNA
UNIVERSITY OF
ECONOMICS
AND BUSINESS

BLOCKCHAIN FORUM 2019

The Blockchain Forum chaired by Claudio Di Ciccio (WU Vienna, Austria), Luciano García-Bañuelos (Tecnologico de Monterrey, Mexico), Rick Hull (IBM T.J. Watson Research Center, NY USA), Mark Staples (Data61, CSIRO, Sydney, Australia) took place at BPM 2019. The forum aimed at providing a platform for the discussion of ongoing research and success stories on the use of blockchain for collaborative information systems. The papers selected for the Blockchain Forum showcase fresh ideas from exciting and emerging topics in the area of blockchain technologies with a special focus on, yet not limited to, business process management.

https://bpm2019.ai.wu.ac.at/call-for-blockchain-forum/

17TH INTERNATIONAL CONFERENCE ON BUSINESS PROCESS MANAGEMENT IN VIENNA

This year's International Conference on Business Process Management (BPM) took place in Vienna, Austria. The seventeenth edition of the conference provided a forum for researchers and practitioners in the broad field of business process management. To accommodate for the diversity of the field, the conference hosted tracks for foundations, engineering, and management.

BPM 2019 was organized by Jan Mendling, Vienna University of Economics and Business (WU Vienna), and Stefanie Rinderle-Ma, University of Vienna. Around 500 participants from 50 countries joined to discuss new trends and challenges in research and practice. The conference started with a doctoral consortium, where current PhD students discussed their research ideas with senior researchers from the field. The following five days, research talks, workshops, forums, demonstrations, tutorials, keynotes, and a panel discussion contributed to a broad and diverse program.

Despite the scientific agenda, social events offered the opportunity to interact with other participants. As a highlight, the major of Vienna invited the participants to the city hall for a welcome reception. Next year's BPM conference will take place in Seville, Spain.

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ICIST 2019

ICIST 2019 – THE 25TH INTERNATIONAL CONFERENCE ON INFORMATION AND SOFTWARE TECHNOLOGIES

October 10–12, 2019, Vilnius, Lithuania

https://icist.ktu.edu/

ICIST 2019 was organised by Kaunas University of Technology, a leading technical university in the Baltic States. In 2019, the promotion of interdisciplinary research remained a priority, emphasizing the combination of social and IT needs in the context of information and knowledge driven society. Traditionally, the conference targeted four major R&D areas, namely, Information Systems, Business Intelligence for Information and Software Systems, Software Engineering, and Information Technology Applications. The papers were further subdivided into nine special sessions:

(I) Innovative Applications for Knowledge Transfer Support, (II) e-Health Information Systems, (III) Intelligent Methods for Data Analysis and Computer Aided Software Engineering, (IV) Intelligent Systems and Software Engineering Advances, (V) Smart e-Learning Technologies and Applications, (VI) Language Technologies, (VII) Digital Transformations, (VIII) Information Technology Security and (IX) Software and Model Metrics and Measurements.

The conference featured three keynotes, one workshop, and 40 paper presentations and researchers from several ERCIS partner universities were part of the conference committee. Proceedings of the event were published as a volume of Springer-Verlag CCIS series.

THE 11TH ACIIDS 2019

ACIIDS 2019 was the 11th event in a series of international scientific conferences on research and applications in the field of intelligent information and database systems. The aim of ACIIDS 2019 was to provide an international forum of research workers with scientific background on the technology of intelligent information and database systems and its various applications. The ACIIDS 2019 conference was co-organized by BINUS University (Indonesia) and Wrocław University of Science and Technology (Poland) in co-operation with the IEEE SMC Technical Committee on Computational Collective Intelligence, European Research Center for Information Systems (ERCIS), University of Newcastle (Australia), Yeungnam University (South Korea), Leiden University (The Netherlands), Universiti Teknologi Malaysia (Malaysia), Quang Binh University (Vietnam), Ton Duc Thang University (Vietnam), and Vietnam National University, Hanoi (Vietnam). It took place in Yogyakarta in Indonesia during April 8–11, 2019.

For this edition of the conference, we received more than 300 papers from 38 countries all over the world. Each paper was peer-reviewed by at least two members of the international Program Committee and the international reviewer board. Only 124 papers with the highest quality were selected for an oral presentation and publication in these two volumes of the ACIIDS 2019 proceedings.

Award winners and jury of ERCIS Launch Pad 2018

ERCIS Launch Pad

ERCIS LAUNCH PAD

ERCIS Launch Pad – the annual IT business ideas competition of ERCIS – was held for the 12th time on 27th November 2019. Keeping up the tradition of past Launch Pads, it serves as platform for founders and potential founders from all over Germany to present their ideas to a top-class jury of founders, funders, and academics. As in previous years, participants of the 12th Launch Pad could win cash and attractive prizes.

For the 11th edition, which took place in 2018, the jury, where also ERCIS advisory boards members were part of, decided to invite six finalists to pitch their ideas. After entertaining presentations and intense discussions, BrainPlug won the award for best overall concept for their AI solution that monitors hundreds of cameras for responsible security while respecting privacy without the storage of biometrical data. The regional medium-sized business award as well as the audience award went to clevabit, who aims to monitor real-time health and environment data streams for better farming, helping farmers and veterinarians alike. Last but not least, Hygenator convinced the jury with best scientific grounding of their RefresherBoxx, which disinfects, dries, and refreshes footwear, sports gear, and textiles based on Ozone, UV-light, and hot air.

arvato
BERTELSMANN
Supply Chain Solutions

OUR COMPANY
We, as the business unit of Arvato Supply Chain Solutions with industry focus on automotive, banks and insurance companies, provide integrated logistics and IT solutions within marketing, sales and after sales. By developing and operating complex global supply chains, IT platforms and omni-channel solutions, we support leading automotive brands, banks and insurance companies to transform into data-driven and customer-centric businesses. Our extensive industry knowledge and entrepreneurial spirit enable us to offer a unique and integrated combination of consulting and operational excellence.

Every day, we deal with key trends like connectivity, new mobility and agile working to manage the challenges of digital transformation together with our partners.

For more information, please visit:
https://arvato-supply-chain.com

OUR DNA
- Entrepreneurial spirit

- Agile, flexible, pragmatic

- Collaborative, both internally & externally

- Innovation hungry

- Service provider mentality

TOPICS OF INTEREST
- New Mobility

- Data Science

- Omni-Channel Commerce

- Supply Chain Management

- Digital After-Sales

- Software & App Development, incl. UI/UX

NUCLEUS INNOVATION MANAGEMENT
In Q4/2018, our innovation management program Nucleus launched in Münster. Together with WWU Münster and ERCIS, we hosted an idea contest on mobility & big data. The aim of these contests was to bring experts and young professionals together and allow them to work collaboratively on new approaches, solutions and business models.

Stay tuned for upcoming content and check out the former promotional video!

JOB OPPORTUNITIES (E.G. IN MÜNSTER)
We are looking for individuals who enjoy changing and improving the world around them and want a global player with a start-up mentality to help them move forward in their career.

We are regularly looking to fill these positions:

- UX/UI Designers
- Junior Software Developer Java/Web
- (Junior) Project Manager
- (Junior) Business Intelligence Manager
- …

Feel free to contact us!

CONTACT
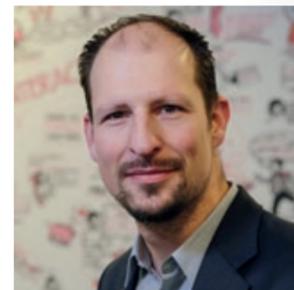
Dr. Stefan Hörnemann
Director Business Development
& Strategy

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avantum consult
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DATA & BUSINESS ANALYTICS
We are Business Analytics specialist for the region Germany, Austria, and Switzerland. Our customers profit from modular solutions in the areas of Data Management, Reporting, Planning, and Advanced Analytics. With a 100 % go-live rate, our success in these fields is founded on best practices from more than 1,250 consulting projects and over 650 consultant years of experience.

No matter whether you want to make your decision processes more efficient, optimize your planning, or gain new insights into your data – we have the right solution to systematically improve your business performance. As Business Analytics specialist we support our customers across the entire IT value chain: with concepts, technologies, and agile leadership for better awareness and better results.

Our consultants offer a wide range of business and technical expertise and the necessary feeling for how the individual challenges of the organization can be optimally solved within the project. In this way, we ensure both project success and systematic improvement of your company's performance.

OUR EXPERTISE
We give you intelligent solutions based on leading providers, comprised of individual yet tried-and-tested business logic with a short implementation time.

As an IBM Gold Business Partner, we have a leading position in the market, especially in the area of planning analytics. As part of the All for One Group AG, we also offer a comprehensive, group-wide SAP portfolio of efficiency-enhancing add-on solutions plus our own Application Management Center.

SELECTION OF OUR ANALYTICS SOLUTIONS
Our many years of consulting experience and knowledge of our customers' diverse technical challenges are incorporated into high-performance avantum solutions.

APOLLO
driven by IBM Planning Analytics
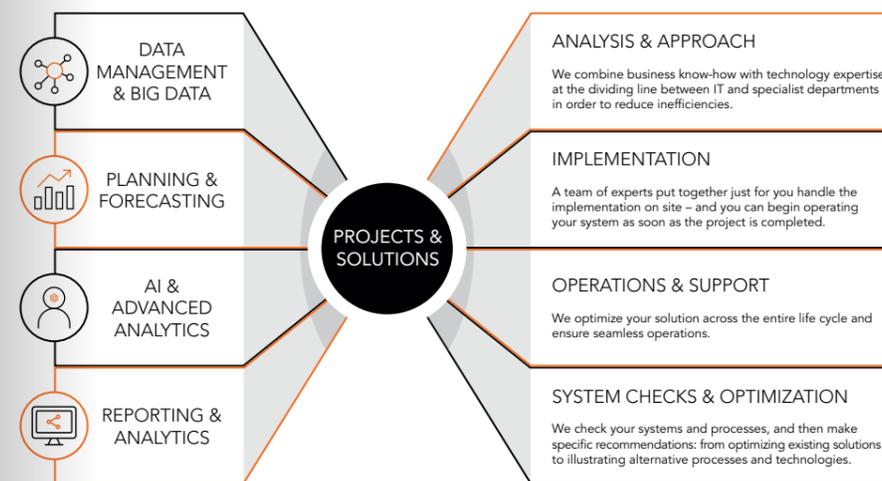
Integrated planning, reporting & legal consolidation: APOLLO is a holistic map of planning, analysis, and reporting processes. The integrated reporting functions are based on the Bissantz DeltaMaster – the perfect tool for controllers who want to explain the causes of performance deviations quickly and comprehensively.

ACXO-COCKPIT
driven by SAP Analytics Cloud

Modern reporting & flexible self-service BI with SAP technologies: The aCXO-Cockpit optimizes reporting processes by combining quantitative data with meaningful reports in a single, secure, and collaborative platform.

JOB OPPORTUNITIES
As a consultant at avantum consult you work closely with our customers in all industries and together with your colleagues. Within our projects, you will quickly take on responsibility and assume a variety of tasks.

We are always looking for talented and motivated employees in Dusseldorf, Filderstadt, Munich, Hamburg and Zurich.

Our hierarchy model allows for the following level and positions:

- Assistant Consultant
- Consultant
- Senior Consultant
- Manager/Solution Expert
- Senior Manager/Senior Solution Expert

Current vacancies can be found at:
www.avantum.de/karriere

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AI & ADVANCED ANALYTICS

REPORTING & ANALYTICS

PROJECTS & SOLUTIONS

ANALYSIS & APPROACH
We combine business know-how with technology expertise at the dividing line between IT and specialist departments in order to reduce inefficiencies.

IMPLEMENTATION
A team of experts put together just for you handle the implementation on site – and you can begin operating your system as soon as the project is completed.

OPERATIONS & SUPPORT
We optimize your solution across the entire life cycle and ensure seamless operations.

SYSTEM CHECKS & OPTIMIZATION
We check your systems and processes, and then make specific recommendations: from optimizing existing solutions to illustrating alternative processes and technologies.

BISON

www.bison-group.com

ABOUT THE COMPANY

As a leading supplier of merchandise management systems, Bison offers complete solutions for retail. Bison has its headquarters in Sursee, employs approximately 300 staff and generates a turnover of over EUR 70 million. With over 30 years of market experience, Bison makes a reliable, secure contribution to the success of its customers. Each customer receives comprehensive and long-term support, with a focus on mutual trust and the protection of customers' IT investments.

Bison Smart Retail Solution was specially developed for the retail sector. This solution covers the core processes for goods management and at the point of sale in full. By integrating a solution for traceability, Bison offers a modern, up-to-date package of solutions. Based on the standard solution and individually tailored to customer preferences, considerable added value is created for the customer.

The Bison Retail expertise hub has comprehensive process knowledge and can provide and implement technical solutions, above all in all areas relating to multi-crosschannel®. Bison Process enables a crosschannel sales approach and process management, including in-store, e-commerce and m-commerce. This industry model provides retail-specific processes. These can be individually configured to meet the company's requirements, without programming and without losing the release capabilities of the software. The open architecture of Bison Process ensures the company a high level of investment protection; the software is always a step ahead of challenges in the market, both in terms of its technology and its functionality.

The product portfolio is complemented by POS solutions, electronic shelf labelling (ESL), mobile solutions for mobile end devices and digital signage solutions. Bison's modern POS solution can be perfectly integrated into existing system environments thanks to the modular structure and its exceptional flexibility. Thanks to the ESL concept, the headquarters or individual branches can respond quickly to changing market or price situations. The wireless base station simplifies internal processes and creates a direct connection between the shelf and POS. In addition, the electronic shelf labelling at the POS creates new possibilities in terms of information. This is used not only for product identification and price labelling, but also in combination with specially developed apps or with internet of things (IOT) modules which provides further useful services for the customer in terms of traceability of the product, product features, contents (allergens) etc. Thanks to the mobile solutions, normal Smartphone devices can be turned into powerful mobile hand-held devices. The scanning solutions include a barcode scanner, a magnetic card reader and an optional Bluetooth component to connect a mobile printer. The RFID option vastly expands the range of uses. Thanks to standard or individually programmed applications, the devices offer a multitude of in-store application possibilities, e.g. stocktaking, order creation, goods-in process and picking.

Bison offers innovative communication options through digital signage. The solutions can be managed efficiently by the simple user functionality and automatic interfaces. Bison is a general contractor and covers all the processes of a modern re-tailer using integrated solutions, from the central ERP system to branch management to POS systems and digital signage.

TOPICS OF INTEREST
- Interest in European (sales) partnerships

- Development of new approaches to tackling retail-specific questions and problem areas bearing in mind the cloud approach

- Integration of Zebra Technologies, iPod, iPhone, iPad and Samsung Galaxy in operating procedures

- E-Paper integration options (e.g. Electronic Shelf Labeling)

JOB OPPORTUNITIES
- For students:
  Diploma/bachelor theses in the fields of IT, software development and marketing

- For graduates:
  Consultants, software developers, project managers and sales representatives

For further information please visit
www.bison-group.com

CLAAS

ABOUT THE COMPANY

There are very few companies that have influenced the development of agricultural technology, and also agriculture itself, as much as CLAAS has. What started in 1913 with the manufacture of powerful straw binders has become a leading giant on the global market: CLAAS is one of the world leaders in the production of agricultural technology. The company is the European market leader in combine harvesters and world market leader for self-propelled harvesters. Its tractors, balers and forage harvesting machines also hold top positions in agricultural technology worldwide. This is supported by the most state-of-the-art information technology. Machine-to-machine communication, intelligent networking, the improvement of the harvesting process as a whole – Industry 4.0 is already the company's reality and sustainability is its principle.

CLAAS products ensure efficiency in agricultural production and they go easy on natural resources as they continuously reduce energy consumption. Around 11,000 employees are engaged in this task in 140 countries; talented people from all professions, who make their daily contribution towards feeding the world.

TOPICS OF INTEREST
- Connected Machines
- Farming 4.0
- Omni-Channel Customer Experience
- Precision Farming
- Data Management

Up until just a few years ago, the trend in agricultural engineering was characterized by increasingly large machines. Today, however, the harvest chain is seeing many innovations coming through, especially in drive technology, machine intelligence and networking. In 2010, CLAAS consolidated its range of electronics expertise and, since then, has placed it under a collective name. "Efficient Agriculture Systems", abbreviated as "EASY", is the CLAAS collective term, which encompasses machine control and performance optimization, steering systems, precision farming and monitoring, software solutions and services.

However, digital transformation has not only changed the technology of our machines. New product features, different license models and data driven business models require our business unit for sales and service to rethink our traditional way of doing business. At CLAAS we are striving to digitize all traditional customer touchpoints for each and every farmer. Our online and offline world is merging into one Omni-Channel customer experience.

JOB OPPORTUNITIES

CLAAS is special because it is a family-owned company with a long-term, forward-looking approach, which is based on the commitment of its employees. At CLAAS, you won't find 'just another job'. You will instead face the challenging task of continuously improving harvesting performance through innovative technology.

Selected vacancies in Germany for professionals:
Solution Owner or Developer SAP PP, Solution Owner or Developer SAP EWM, Solution Owner or Developer SAP MM/EWM, DevOps Engineer, Solution Owner or Developer Microsoft Dynamics D365 FO Sales Processes, Specialist SharePoint, Data Scientist, Solution Owner or Developer SAP SD, Fullstack Cloud Developer, Solution Owner or Developer Salesforce.

Selected vacancies in Germany for students:
Internships in the areas of Dealer Management Systems, Digital Product Engineering, Interfacedesign, CRM/Sales Force, Digital Customer Touchpoint, Configurator.

CLAAS Inside Program in the following areas: Corporate IT, IT Service Management, Data Science, Dealer Management System, Web Applications and CRM/Salesforce. With CLAAS Inside you will work at CLAAS 1.5 days per week during the semester and full time during the semester breaks.

If you have any questions about our current international vacancies, our contacts at the respective locations are happy to help.

Further information: www.claas.jobs

Instagram: @claas_careers

IT EXPERTS FOR UTILITIES

ABOUT THE COMPANY

With a pioneer spirit and start-up attitude cronos was founded in 1991 in Münster, Germany. Our core area of consulting is IT and process optimization for utility companies. We support our customers in the process of digitization and the development of new business fields.

cronos is a recognized SAP partner, has long standing partnerships with universities and a combined experience of over 1000 customer projects. Drawing from this experience and based on the latest technological trends, like Blockchain, SAP S/4HANA, Robotic Process Automation, Process Mining and Machine Learning, we are able to develop innovative and approved solutions for the utilities industry.

We make an active contribution to the success of the energy transition in Germany, Austria and Switzerland. With over 300 permanent consultants in 5 locations, we are the biggest independent SAP consulting firm for the utilities industry in GSA. Our success is the result of a well-balanced team formation bringing together young and experienced IT specialists, who are among the most sought-after consultants in the industry.

FACTS
- market leader as biggest independent IT consultancy for the utility sector
- 300+ consultants
- 200+ active customers
- 1.000+ successful projects
- 25+ years of experience
- SAP Gold Partner, UiPath Gold Partner, Celonis Gold Partner

TOPICS OF INTEREST
- software engineering
- project management
- process automation
- portals
- apps
- SAP HANA
- CRM
- SAP Customer Experience
- analytics
- online marketing
- HTML5, JAVA
- SAP Cloud Platform
- SAP Fiori
- Machine Learning
- strategy consulting
- AI
- SAP UI5
- Process Mining
- Robotics – RPA

JOB OPPORTUNITIES

To think outside the box is more important than ever, especially in IT. Driven by innovative and creative young people, digitization accelerates the development of new technologies and new challenges. Granting young professionals the freedom to explore ideas and to assume more responsibilities is part of our credo.

We maintain a strong academic network and offer attractive programs for students and graduates. Our regular workshops, graduate programs and extensive onboarding system jumpstart a career in IT development and consulting.

WE ARE LOOKING FOR TALENTS

Junior IT consultant
Junior RPA developer
Junior app developer
Junior cloud developer
Junior ERP consultant
Working Student

Find out more about our student and graduate programs:

www.cronos.de/campus
www.cronos.de/cronologewerden

cronos company building @harbour Münster

D·M·I ARCHIVIERUNG

ESB_Professional/shutterstock.com

ABOUT THE COMPANY

DMI takes responsibility for the digital archiving of patient records and provision in client software systems. Since 1966, the specialised service provider has been providing hospitals with continuous support in the optimisation of information-based processes and with fully compliant archiving throughout constant changes in technology and framework conditions. In production centres and at clients' locations, DMI staff digitise, qualify, integrate and archive every second patient record for in-patients based on certified information security and data protection guidelines and ensure seamless integration into health IT systems. Through its interface expertise with all data management HIS architectures, DMI enables the consolidation of digitised paper-based patient records with electronic documents and data, as well as medical image documentation, in audit-proof long-term archives. Interoperability (the ability of systems to interact with one another), including on a data level, is the basis for the integration and sustainability of our solutions.

DMI provides its clients with lean, secure, efficient processes through consolidated patient records.

Our relationships with our clients are shaped by commitment, respect and fairness. The quality of our service business is based on the professional and social skills of our employees.

TOPICS OF INTEREST
- Consolidating medical records including electronic and digitized documents
- Interoperable IT architectures based on current standards
- Audit-proof digital archiving for compliance
- Deep integration of archived documents into administrative and clinical workflows for enabling effective clinical processes for best patient outcomes
- The link between medical informatics and medical research as well as routine practice in healthcare

DMI AS AN EMPLOYER

DMI is not your typical medium-sized company: it is an owner-managed organization of roughly 1,000 highly motivated staff and a flat hierarchy. Its approach is long-term and sustainable, with continuing education of employees as a key ingredient. With a focus on the German healthcare market and additional activities in banking, insurance, general business, and the public domain, DMI offers high-value services:

- digitization, qualification, consolidation, presentation, and archiving of documents
- integration into information-based processes
- analysis of documentation process landscapes and support for optimization aiming at effectiveness and compliance.

Company headquarters are situated in the pulsating university city of Münster in North Rhine-Westphalia (NRW); service centers are located in the castle town of Leisnig near Leipzig (Saxony) and Essen (the "Green Capital", NRW).

JOB OPPORTUNITIES

Are you up to this challenge? DMI's team members are committed to achieving results for customers in a dynamic ecosystem of evolving technologies and continuously changing customer demands. A multitude of benefits make DMI an attractive employer.

- Selected open positions in Germany for professionals: (senior) software developers for applications, information systems specialists, experts for IT infrastructures and networks.
- Selected open positions in Germany for students: thesis students (business IT, information systems, IT, software development) for innovation in documentation and archiving enabled by state-of-the-art IT and by digital transformation.

FOR MORE INFORMATION, CONTACT:

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Mobile +49 151 40798718
viola.henke@dmi.de
www.dmi.de

ABOUT HILTI AND HILTI GLOBAL IT

Hilti makes construction work simpler, faster and safer. At Hilti we create and design leading-edge technology, software and services, which power the professional construction industry. We're global, based in over 125 countries with more than 29,000 employees. Everyday our technologies support awe-inspiring feats of engineering around the world – from the famous bullet train in Japan to metro tunnels deep under the largest cities on earth. We offer a 360 degrees service for professionals on site – from software for design, products and tools for work onsite to training, repairs, testing and consultancy. We're a one-stop shop for building, worldwide.

Our customers are at the heart of everything we do. That's why we run our own direct sales teams, with over two-thirds of our Hilti team members working directly with our customers every day. That's 250,000 interactions worldwide online, on the phone, in our stores and on site. And at Hilti we don't believe in just sitting in the office. Our sales teams and field engineers work closely with our customers on site, finding solutions to make builds faster, easier and safer. All this drives our innovation, because we know and understand what our customers really need.

And, Hilti is a great place for you to show your worth as you learn, grow and carve-out your career in Information Technology. The Global IT within Hilti is where you'll find all of our digitized business processes and related IT services that support our business. We are a truly global team with main hubs in Buchs (Switzerland), Kuala Lumpur (Malaysia), Plano/Tulsa (USA), Paris (France) and Singapore. All locations

have highly competent teams who work very closely together. Hilti's Global IT team is known for their focus on sustainable value creation by translating latest IT innovations into value creating solutions and services. We're a lighthouse and reference customer for SAP, driving digital transformation as the world's first multinational company that successfully implemented S/4HANA to the entire organization. We're also an industry leader in cloud computing – both as a consumer of public cloud services and as a provider of cloud services to our customers.

So, have a career with the best! Become a valuable member in a highly professional and international team of IT experts and meet the challenges of a global multinational company using latest technologies.

TOPICS OF INTEREST

- Product IT & IoT
- Supply Chain Management & Industry 4.0
- Digital Marketing & Sales
- Business Process Management & Business Excellence
- Data Analytics & Information Management
- IT Security & Governance
- Smart Workplace & Client Technology
- Enterprise Computing, Cloud Deployment & Enterprise Architecture

ENGAGEMENT OPTIONS
FOR STUDENTS AND TRAINEES

- Internships: A working head start while the students are still at university; a combination with thesis research is possible (3–12 months)

- Hilti IT Fellowship: Study a semester abroad at the University of Liechtenstein and work in an international project team in Hilti (5 months)

- Hilti IT Management Program for Graduates: Trainees work closely with senior management to unleash their leadership potential from day one (12 months)

Applications through *careers.hilti.com*

JOB OPPORTUNITIES
FOR GRADUATES

- IT Process Consultants
- IT Project Managers
- Data Scientists and Business Analysts
- IT System Engineers and Solution Architects

Find more open positions on *https://careers.hilti.li/en-li/corporate-it* or get in touch with us directly.

INFORMATIONSFABRIK
DATEN VERSTEHEN, ENTSCHEIDUNGEN TREFFEN

OUR MISSION? RAISE DATA TREASURES!
We develop ideas, offer solutions and drive companies forward.

ABOUT THE COMPANY

Where quick reactions to ever changing business requirements are of paramount importance and subsequent decisions have a wide impact, we provide the pertinent facts. Informationsfabrik consultants are experts in the areas of Next Generation BI, Big Data and Artificial Intelligence. Our focus lies on the financial and insurance service industry, the banking and industry sector.

WE PRODUCE INFORMATION

Decision making in companies is based on the evaluation and analysis of information. Be it for intelligent marketing, for improved customer communications and recommender systems, or for determining churn probabilities: Accurate information to act upon has become a major asset for any business process. With methods provided by Data Analytics and Artificial Intelligence, a whole lot of new possibilities to extract and condense information from data came into existence.

We support our customers in several analytics subject areas. Our team shares the aspiration to deliver information in the correct format to the right person at the right time using modern technologies and our innovative approaches.

Visual Analytics promises a fast and effective way to get a thorough understanding of business data. No means are better suited to give meaning to data than a visual form of representation. We support our customers by creating diagrams and conveying the required knowledge. In fact, we

also empower our clients to conduct ad-hoc analysis and reports by providing an environment in the sense of BI Self-Service which can be used by power- or business users without IT assistance. Eventually this leads to faster and more accurate decision-making. Of course, we will make sure that any data governance and legal obligations are met.

We design and implement BI, DWH and Big Data solutions. In a Data Warehouse data from different source systems and of varying formats is consolidated, stored for data analysis and ultimately used to support business decisions.

Our highly qualified staff has acquired profound knowledge for conception and design of such solutions and are familiar with new modelling and architecture paradigms.

Another important subject area is Big Data. In recent years the amount of semi- or unstructured data sources has massively increased. At the same time the challenge of realizing storage, information extraction, and information integration for analysis rises. We support our customers to cope with the difficulty of complex Big Data solutions.

Last, but not least we employ Data Science and Predictive Analytics methods to create new possibilities for extracting knowledge from our client's data. We offer guidance on planning and executing Data Science projects. Following our self-developed approach, shaped by the experience from hundreds of projects, we handle vast amounts of data and deliver high quality information and predictions.

We collaborate closely with our customers and help to expand their knowledge with individual trainings and valuable coaching.

Since our foundation in 2000, we managed to become renowned business analytics experts. To give our clients certainty in a couple of mouse clicks is the goal we have devoted ourselves to.

IQ-OPTIMIZE

The IQ-optimize Software AG is a provider of modern, innovative software technology and offers its customers reliable and customer-oriented IT services. Since 1996 IQ-optimize develops customized applications and advanced software products. The IQ-optimize Software AG is a subsidiary of 1&1 Drillisch AG. 1&1 Drillisch AG is a listed public limited company and offers telecommunications services. The portfolio of the IQ-optimize Software AG is broad. The priorities are customer oriented and serve all needs of costumers

Main competences of IQ-optimize Software AG are:

- Software development, operation and maintenance of workflow and document management systems for business processes automation, billing and mediation, ERP and retail for web shops, stores and indirect sales including sales of subsidized goods.

- Media design for trendsetting websites.

- Implementation, hosting and operation of customized IT infrastructures and cloud solutions including service management, maintenance, security and monitoring.

- IQ Optimize is Advisory Board Member since 2004.

RESEARCH TOPICS

Optimization; Innovation; Omnichannel; Telecommunication; Workflow Management; CRM; Web Sales; Retail; Business Intelligence; Service Management and Security; Hosting and Cloud Solution

JOB OPPORTUNITIES

We are offering various job opportunities within our Software Development, Billing, Operation, Business Intelligence, Media Design and Project Management Units. Additionally to these areas we are offering job opportunities within our Cloud Technology area based on OpenStack. Please refer to *https://www.iq-optimize.de/job* for further details.

http://www.iq-optimize.de

SAP

We help the world run better and improve people's lives.

As the cloud company powered by SAP HANA®, SAP is market leader in enterprise application software, helping companies of all sizes and industries run better. From back office to boardroom, warehouse to storefront, desktop or mobile device to the cloud – SAP empowers people and organizations to work together more efficiently and use business insight more effectively to stay ahead of the competition. SAP applications and services enable more than 335,000 customers to operate profitably, adapt continuously, and grow sustainably. SAP helps simplify technology for companies of all sizes so they can consume our software the way they want – and without disruption. With an extensive global network of customers, partners, employees, and thought leaders around the world, SAP helps the world run better and improve people's lives.

For more information, visit:
www.sap.com

Bring everything you are.
Become everything you want.
Find yourself working at SAP:

sap.com/careers

ABOUT THE COMPANY

The retail company Lidl is one of the leading companies in the food retail sector in Germany and Europe. We place value on an optimal price-performance ratio for our customers. At Lidl, we are convinced of our business model "best quality at the best possible price" – in a pleasant shopping environment. We are a retail chain with a systematic store concept. Simplicity and process orientation determine the daily activities in the stores, the regional distribution centers and the national subsidiaries. Lidl is represented in 30 countries worldwide – in Europe, USA and Hong Kong. Lidl operates some 10,500 stores, more than 150 distribution centers in currently 28 countries and has some 260,000 employees. Dynamism in daily implementation, performance in the results and fairness in dealing with one another characterize working at Lidl across the globe. The headquarter of the company is still based in Neckarsulm. In the 2017 financial year, Lidl generated revenues of 74,6 billion Euros.

Our guiding principle: "If you stop getting better, you stop being good!" Our corporate culture comprises the willingness to develop ourselves further, adapt to new circumstances and continually improve ourselves. We go about this in a dynamic and team-oriented way. Our willingness to do things differently or to adapt existing concepts is what makes us successful.

Efficient processes form the basis for a successful business model that offers customers in Europe the best product quality at the best price. A powerful IT system and application landscape makes up a significant portion of constant process optimization. Lidl – in addition to its production companies, GreenCycle and Kaufland – is part of the Schwarz Group. In turn, Schwarz IT is the central IT technology partner and service provider for the entire Schwarz Group, and is responsible for the selection and provision of IT infrastructure, IT platforms and business applications. By continuously taking current technological developments into account, Schwarz IT identifies innovative courses of action and, in close cooperation with the departments, also develops professional, efficient IT solutions. In summary, Schwarz IT is responsible for IT at more than 12,000 locations throughout the Schwarz Group in over 30 countries and is well on course to implementing Trade 4.0. The high-performing, motivated and entrepreneurially thinking IT team safeguards its success by means of close collaboration along with intensive and fair interconnectivity and cooperation with the world's leading software- and technology companies such as SAP, Intel, Apple, Microsoft, GK Software, Teradata, MicroStrategy and implementation partners such as KPS, Software AG, Ernst & Young, PricewaterhouseCoopers and MGM. This is supplemented by projects with research institutes at renowned universities.

TOPICS OF INTEREST

Digital Transformation and Innovations, Business Transformation, Cloud, Informatica, Master Data Management, SAP HANA, Big Data, Business Intelligence & Analytics, SAP Retail/EWM/CAR, Salesforce, CRM, SuccessFactors, GK Software, Hybris, Solution Development, Design Thinking, Conversational Commerce (Chatbot, Voicebot), Artificial Intelligence, Google

JOB OPPORTUNITIES

In a wide range of exciting tasks and global projects, employees work in a dedicated, independent and cheerful way towards providing optimal support for the business of Europe's largest retail company with respect to assisting global business processes, and designing, developing and rolling out systems. Further, they ensure a highly available IT system and application landscape as well as ultra-modern high-end technologies. Goals: Using one IT platform and system landscape to reduce the complexity of applications in an agile way and to place emphasis on the user's benefits.

Become part of Schwarz IT, the powerful technology partner of Schwarz Group. We are looking for go-getters, who will help us to safeguard the digital heartbeat of all of our production companies, GreenCycle, Lidl and Kaufland: efficiently, quickly, and flexibly. We offer a variety of opportunities from internships to permanent positions.

Schwarz IT. More IT than you might think! Find out about our attractive job offers at:
it.schwarz
jobs.lidl.de

PICTURE

ABOUT THE COMPANY

The PICTURE GmbH intends to promote organisations in their modernisation efforts. We combine a methodical approach, technical support and considerable process expertise with a sustainable qualification approach. This integrated approach helps to achieve success in process management. The PICTURE GmbH is a spin-off of the University of Münster, founded in 2007 by Lars Algermissen and Thorsten Falk. Thereby the PICTURE GmbH stays connected with the university and still benefits from a transfer of knowledge. The core business segment of the PICTURE GmbH is process consulting, process analysis and organisational design. The PICTURE GmbH is a consulting firm as well as a software company with consultants and developers specialised on process consulting. The company is well known for the PICTURE method and the PICTURE platform, which in combination allow describing, analysing and optimising business processes within organizations.

THE PICTURE METHOD –
EASY. EFFECTIVE. EFFICIENT.

On the basis of 24 building blocks the Picture method provides the opportunity of process controlling by gathering and illustrating process data in a plain and transparent manner.

This method of process modelling lays the foundation for an extensive business assessment, as it offers a target-oriented and efficient way to analyse the coherencies of a company's organisational structure and business procedures.

The following illustration furnishes a brief overview about the Picture method:

Self-Explanatory
Simplified process modelling due to easy-to-use an intuitive components.

Standardized Process Description
Increased comparability and analysability due to a formal and contentual standardisation of the description level.

Instruction and Integration of Employees
Due to its simplicity it enables employees to adopt this model quickly and fosters staff acceptance.

Flexibility in Process Description
The PICTURE method can be personalised according to the individual requirements of organisations.

Efficient Process Modelling and Activity Analysis
The 24 buuilding blocks enable to filter essential information for further analysis.

THE PICTURE PLATFORM
The Picture method is embedded in the web-based Picture platform. This platform serves to support process management within organisations as well as inter-site projects. The PICTURE platform is tailored to the special needs of organisations and aims to provide a vivid, precise and generally intelligible methodology to illustrate these needs through customised processes.

Visit our website *www.picture-gmbh.de*

JOB OPPORTUNITIES
Job Opportunities at the PICTURE GmbH:

- (Junior) Sales Consultant (f / m)
- (Junior) Consultant
- (Senior) Consultant
- Software Developer
- Student Assistant (f / m)

TOPICS OF INTEREST
- Process management and optimisation
- Quality Management and Risk Management
- Organizational review
- Knowledge Management
- Task and Product Review
- Software implementation
- Process Benchmarking
- Change Management
- Process-oriented Budged Consolidation
- Implementation of Document Management Systems Reorganisation Studies Interface Analyses, Implementation of Software

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viadee®
IT-Unternehmensberatung

AT VIADEE, YOU ARE IN THE RIGHT PLACE

ABOUT THE COMPANY

viadee Unternehmensberatung AG is a German IT-Company with more than 150 tech-interested employees. Our company culture is dedicated to caring for each one individually, maximizing our potential. Applying this principle, we have come a long way since 1994 to offer great individual solutions to our customers.

viadee currently has an office in Münster, as well as an office in Cologne. Both are located in the state of North-Rhine Westphalia, allowing us to focus a regional customer base. Projects are seldom far away from our employee's home location, which proudly makes us say that most of our consultants have the chance to sleep at home.

The industry sectors, in which our consultants are active, include banking, electric power industry, trade, IT and service companies, logistics, public service, telecommunications, insurers, logistics and supply plants.

TOPICS OF INTEREST
We consist of a lot of people with a technological and methodical affinity. Keeping up to date with the ever-changing world of IT, there exist various opportunities within viadee.

Bringing BPMN (business process model notation) models to life is currently one of our core activities. Prominent mention should be given to our process warehouse, as well as our confluence BPM-Modeler. This happens often in agile projects leveraging other Java-based technologies, be newest technologies with Spring Boot, or established practices like WSDL and Soap. Java and SAS have accompanied us through almost all of our company history and with most customers. However, we take an undogmatic view on technologies and methods and use whatever is appropriate. To keep up with the scientific discussion we enjoy cooperation, both with ERCIS, and other research institutions.

Test automation is great to ensure software quality. We feel it is even greater with software developed here called vTF, the viadee test framework. An opportunity to create cross-platform integration tests, be it web-based, or on the level of an operating system.

Areas of expertise and consulting products, such as these, are invented and supported like internal startups. Employees have the opportunity to contribute their topics of interest as part of our research and development activities. Right now, this is happening with explainable artificial intelligence (XAI), IT-Security, Cloud Architecture, and several other topics.

JOB OPPORTUNITIES
Interested in our topics and ready to take the next step? If you see yourself in a technical role, while being open and interested in the social components of everyday business life, we would love to welcome you on board.

IT-Consultant for
- Software Development
- Software Architecture
- Business Intelligence

To find out about our benefits and further job listings make sure to visit our website *www.viadee.de/karriere*. For a closer look at our field of interest, you are invited to follow along at *blog.viadee.de* – a blog to which every employee can add content.

FOR MORE INFORMATION,
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www.viadee.de

GREAT PLACE TO WORK®
2018
Beste Arbeitgeber™
Deutschland

Westfalen

5 Awards

Best employer (Focus Business)
"Club der Besten"
Germany's best fuels
Johnson Controls: Top supplier
Top local supplier

ABOUT THE COMPANY

The Westfalen Group is an energy sector technology company operating with a total of 23 subsidiaries and associates in Germany, Belgium, France, the Netherlands, Austria, Poland, Switzerland and the Czech Republic. The family business, founded in 1923, has over 20 production sites located across Europe and is headquartered in Münster. Its business sectors are gases, energy supply and service stations. With about 1,700 employees, the Westfalen Group posted sales of around 1.9 billion euros in the 2018 financial year.

Gases

The Westfalen Group produces and distributes approximately 300 technical gases and gas mixtures for almost every application in industry and trade, food production, laboratories, pharmaceuticals, medicine and homecare. These gases include nitrogen, oxygen and argon, which are generated in three dedicated air separation plants, as well as acetylene and hydrogen. Refrigerants and heat transfer fluids for refrigeration and air-conditioning technology round out the diverse portfolio.

Energy Supply

Under its Westfalengas brand, the Westfalen Group is one of Germany's leading liquid gas supply companies. There are more than 2,000 possible applications for Westfalengas: as off-grid thermal energy for heating factories and agricultural buildings, for thermal processes in industry and commerce, or as an environmentally friendly propellant for passenger cars or forklift trucks.

Service Stations

With around 260 stations, the Westfalen Group has the largest independently-branded filling station network in Germany, primarily in North-Rhine Westphalia and Lower Saxony. In addition to conventional fuels, Westfalen and Markant stations also offer the alternative energies of LPG, charging current and hydrogen. Westfalen also offers a number of innovative shop and restaurant concepts, including its own food court brand "Zum Glück, Genuss mit Plus", coffee brand Alvore Caffè and drive-through counters for shopping and food.

A family owned company

The Fritsch-Albert family ensures continuity of the family company: Since July 2018, Wolfgang Fritsch-Albert has been Chairman of the Supervisory Board at the Westfalen Group. Prior to this, he led the company as CEO from 1977 to 2018. Renate Fritsch-Albert joined the Supervisory Board in April 2017. She was previously a member of the Executive Board.

Health & social responsibility

Satisfied employees who receive continuous further training are the key to success. This is why the Westfalen Group offers a wide range of services and packages for health management, talent management and company sports. Support services for childcare as well as bicycle leasing by JobRad are also included in the range of services.

A tradition of charitable commitment

For many years, the Westfalen Group has been committed to the "Mitmachkinder" foundation, which supports children from low-income families. Westfalen also supports Sternenland e.V. as a centre for grieving children, teenagers and their families and inclusion projects run by Funky e.V.

Committed by conviction

The Westfalen Group is particularly committed to the region and focuses on sustainable commitment. As an active member of the Industry Acceptance Campaign In|du|strie, the company highlights the importance of industry as an attractive employer, trainer and driver of progress.

Climate protection with hydrogen

The Westfalen Group supports regional and nationwide environmental protection initiatives. In 2018, for example, it entered into a cooperation with Stadtteilauto CarSharingGmbH. Both companies offer an emission-free hydrogen vehicle to rent.

The company is also demonstrating its commitment to mobility of the future in its own vehicle pool. With the Mercedes GLC F-Cell, employees can drive to meetings powered by environmentally-friendly hydrogen.

Both vehicles are refuelled at Westfalen's Münster-Amelsbüren hydrogen service station, located in the Hansa Business Park just off the A1.

Systematic energy and environmental management

The Westfalen Group has, for many years, continued to pursue a rigorous energy and environmental management system. In 2018 the effectiveness of this system was proven once again by the company's successful certification to internationally re-cognized standards DIN EN ISO 14001 (Environmental Management Systems) and DIN EN ISO 50001 (Energy Management Systems). In addition, more than 700,000 kilowatt hours of electricity have been saved over the past three years.

TOPICS OF INTEREST

- Industry 4.0
- IoT in Logistics
- Data Analytics and Machine Learning
- Mobile Solutions
- Business Process Excellence
- Digital business modelss

The Westfalen Group brings movement, heat, mobility and safety to life, industry and economy with a wide range of products and solutions for supplying energy. In order not only to meet the demands of customers, but even to exceed them, new digital methods are increasingly required to pave the way for achieving this goal.

In a highly competitive market, it is essential to constantly monitor, evaluate and, in any case, harness the latest trends.

With an open attitude towards new technology, the company is trying to improve steadily and to follow unconventional paths. In the second half of 2019, so-called "Headventures" took place internally. Here, interdisciplinary teams have tackled the most varied challenges and pitched their innovative future solutions in front of a jury.

JOB OPPORTUNITIES

The focus of success is on people – that's why the Westfalen Group is always on the lookout for talents who bring new ideas and energy into the team. There are many doors open in the company: for pupils, students, career starters or professionals. The most up-to-date job offers are available on the Westfalen website:

https://westfalen.com/de/de/karriere/

Should not be the right job, it is always worth unsolicited applications.

In its own air separation plants, such as here in Hörstel near Osnabrück, the Westfalen Group generates the air gases nitrogen, oxygen and argon.

With the Westfalengas brand, the company is one of the leading liquid gas supply companies in Germany.

In the service stations division, the Westfalen Group has the largest network of Group-independent brand filling stations in Germany with 260 stations – mainly in North Rhine-Westphalia and Lower Saxony.

Westfalen employees also have the option of environmentally-friendly driving with hydrogen: the vehicle can be refuelled at the Westfalen service station in Münster-Amelsbüren.

Westphalia DataLab
Datenanalyse für alle

ABOUT THE COMPANY

The Westphalia DataLab is the leading provider of software products that give every company access to value creation through data analysis. We strongly believe that companies, no matter what size, can leverage a massive hidden data potential by using AI and Machine Learning technology.

Founded in Münster in 2017, we provide data analytics products to SMEs that often lack the capabilities, resources and tech experts in-house, and thus assist in transforming traditional business models to become data driven.

Our products combine state of the art algorithms in the background with a user-friendly interface that requires no data science experience. Besides our self-service product we also offer various enterprise solutions.

If companies strive for the merits they need to trust in these rule-breaking data-driven developments. The logic consequence is that they must trust in tech start-ups and must cooperate to get access to those accelerating tech insights. In order to fully unfold a new era of data-driven business models, companies will have to participate in this obvious market development.

Tech start-ups arose because the spirit of the leading tech experts didn't fit into traditional company structures. They run on their own mantra: faster, no fear of failing and a strong bias towards action. There is no other place where prototyping, sprints

and iterations are as normal as in tech startups like the Westphalia DataLab.

We believe that together, traditional companies and tech start-ups, combine a tremendous business power and make an unbeatable team, if they collaborate on eye level. At the Westphalia DataLab we rely on over 25 years of experience in advanced statistics, a team of 50+ experienced data professionals and a strong collaboration with academia.

Our team of data scientists has carried out numerous projects and supported companies from various industries in exploiting their hidden potentials by using company data as well as terabyte of external data. Our standardized products and our expertise in artificial intelligence enable us to generate added value.

Paired with the strength and trustworthiness of our joint-venture partner FIEGE, pioneer of contract logistics and in existence for 145 years, we empower our customers to exploit their full data potential – 10 times faster and 10 times less expensive.

FACTS

- 50+ Data Scientists
- 35+ Clients
- 130+ Projects

TOPICS OF INTEREST

- Product Development
- Data Analytics as a Service
- Predictive Analytics
- Machine Learning
- Artificial Intelligence
- Automated Analytics
- Big Data

JOB OPPORTUNITIES

Fancy some Data? Then join us and become part of our rapidly growing start-up. Use the unique opportunity to actively participate in the design and development of a young company and new products.

- Data Scientist
- Data Scientist (Internship)
- Data Engineer
- Data Engineer (Internship)
- Web Developer
- Web Developer (Internship)
- Product Manager

For further information please visit our website: *www.westphalia-datalab.com*

zeb.

COMPANY PROFILE – ABOUT THE COMPANY

zeb is the number one strategy and management consultancy for financial services in Europe. With more than 1.000 employees, we develop sustainable strategies and implement them together with our clients—banks, savings banks, insurance companies and other financial institutions—along the entire value chain. Be it in Münster, Milan or Moscow—we, the management consultancy zeb, use the same language all over the world: straight talk. An honest working environment, reliable statements and open communication are part of our corporate culture and form the basis that enables us to achieve long-term success—for us and our clients.

PRODUCTS AND SERVICES –
TOPICS OF INTEREST

As a partner for change, it is our aim to improve the performance and competitive strength of our clients. The success of our consulting services is based on well-founded methodology, combined with in-depth expertise and excellent knowledge of the sector. The focus of our work lies in strategy & organization, finance & risk and IT. We intend to continue our growth path in the future. Our thematic growth focus is on management and IT consulting.

ADDITIONAL INFORMATION
ABOUT THE COMPANY
Collaborative

What you can expect at one of the most successful management consultancies in the demanding financial services market? Respect, trust, team spirit and a down-to-earth attitude. Because at zeb, we firmly

believe that only a culture of collaborating as partners can ensure our success and the success of our clients in the long run. Therefore, flat hierarchies and communication at eye level are very important to us—amongst colleagues, but also in the interaction with our clients.

Diversity

For us, all employees are equal—in terms of opportunities and career development. When it comes to national origin, gender, skin color or sexual orientation, however, we welcome diversity, because at zeb, we care for an open culture where employees are treated solely according to their professional skills. Therefore, zeb promotes international and intercultural cooperation: client projects are deliberately staffed with employees who have different geographic, cultural and linguistic backgrounds, in order to encourage them to learn from each other and grow together as a team.

JOB OPPORTUNITIES
Required specializations:

business administration; economics, (business) informatics, (business) mathematics, applied physics

Possibilities to join the company:

- Internship
- Student assistant
- Theses and dissertations
- zeb.bachelor.welcome
- Direct start

www.zeb.eu/career

www.zeb.de/karriere

WISHY-WASHY OPINIONS BELONG IN THE LAUNDRY. AT ZEB, WE APPRECIATE A CLEAR STATEMENT.

OUTLOOK FOR 2020

FEBRUARY 2020

PHD SKI SEMINAR, 10–15 February, Flumserberg, Switzerland

START HILTI FELLOWSHIP PROGRAM (SUMMER TERM 2020), *www.uni.li/hilti-fellowship*

MARCH 2020

15TH WI 2020, 09–11 March, Potsdam, Germany, *www.wi2020.de*

ACIIDS 2020 – 12TH ASIAN CONFERENCE ON INTELLIGENT INFORMATION AND DATABASE SYSTEMS,
23–26 March, Phuket, Thailand, *https://aciids.pwr.edu.pl/2020/*

DAGSTUHL SEMINAR ON CITY 5.0, 4–6 March, Schloss Dagstuhl, Germany,
https://www.dagstuhl.de/de/programm/kalender/evhp/?semnr=20104

APRIL 2020

MISDOOM – MULTIDISCIPLINARY INTERNATIONAL SYMPOSIUM ON DISINFORMATION IN OPEN ONLINE MEDIA,
20–22 April, Leiden, The Netherlands

MAY 2020

**DAGSTUHL PERSPECTIVES WORKSHOP ON "AI VS BIG DATA, DATA SCIENCE AND ROBOTICS:
SYNERGIES AND DISTINGUISHING ELEMENTS"**, 3–8 May, Schloss Dagstuhl, Germany,
https://www.dagstuhl.de/en/program/calendar/semhp/?semnr=20192

JUNE 2020

33RD BLED ECONFERENCE, 28 June–1 July, Bled, Slovenia, *http://BledConference.org*

DESRIST 2020 – 15TH INTERNATIONAL CONFERENCE ON DESIGN SCIENCE RESEARCH IN INFORMATION SYSTEMS AND TECHNOLOGY,
9–11 June, University of Agder, Kristiansand, Norway

JULY 2020

ICCCI 2020 – 12TH INTERNATIONAL CONFERENCE ON COMPUTATIONAL COLLECTIVE INTELLIGENCE,
27–29 July, Da Nang, Vietnam, *https://iccci.pwr.edu.pl/2020/*

22ND INTERNATIONAL CONFERENCE ON HUMAN-COMPUTER INTERACTION, SESSION ON "DATA, ALGORITHMS,
AND HUMANS IN DIGITAL MANIPULATION", 14–20 July, Copenhagen, Denmark, *http://2020.hci.international*

SEPTEMBER 2020

18TH CONFERENCE ON BUSINESS PROCESS MANAGEMENT (BPM 2020),
13–18 September, Seville, Spain, *https://congreso.us.es/bpm2020/index.html*

11TH ERCIS ANNUAL WORKSHOP, 21–23 September, Wroclaw, Poland, *https://www.ercis.org/events/annual-workshop*

13TH EUROSYMPOSIUM CONFERENCE, *eurosymposium.eu*

16TH INTERNATIONAL CONFERENCE ON PARALLEL PROBLEM SOLVING IN NATURE (PPSN),
5–9 September, Leiden, The Netherlands, *https://ppsn2020.liacs.leidenuniv.nl*

START HILTI FELLOWSHIP PROGRAM (WINTER TERM 2020), Vaduz, Lichtenstein, *www.uni.li/hilti-fellowship*

OCTOBER 2020

CAPSI2020 – CONFERENCE OF THE PORTUGUESE ASSOCIATION FOR INFORMATION SYSTEMS,
Porto, Portugal, *http://capsi2020.apsi.pt/index.php/en/*

ICIST 2020 – 26TH INTERNATIONAL CONFERENCE ON INFORMATION AND SOFTWARE TECHNOLOGIES,
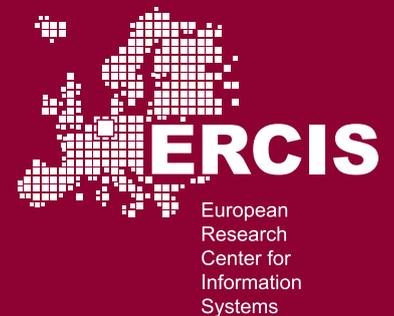15–17 October, Kaunas, Lithuania, *https://icist.ktu.edu/*

ERCIS TEAM

For everything that concerns the ERCIS network simply write us an email. You will for sure get an answer from one of our team members. The team consists of Dr. Armin Stein, who is the managing director of the ERCIS network and is being supported by Dr. Katrin Bergener, who works part-time for the team and furthermore as Coordinator for the WWU Centre for Europe, and Miriam Epke.

Besides answering emails, the team helps organising events, maintains the website, organises the network communication, and supports project applications.

If you are interested in the network, get in touch with them!

info@ercis.org

THE **IS** RESEARCH NETWORK –
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