

ANNUAL REPORT 2017



ERCIS

European
Research
Center for
Information
Systems



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THE ERCIS NETWORK



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

PREFACE

› Preface Prof. Becker www.ercis.org



DEAR FELLOW ERCIS PARTNERS AND INTERESTED READERS OF THIS REPORT,

In the past year, ERCIS has – again – taken important steps towards being recognized as a (the?) leading European network in Information Systems. ERCIS partner institutions were active on various levels: Event-related, the University of Minho hosted the European Conference of Information Systems (ECIS) and the University of Münster hosted the EMO conference. Project-related, the University of Tallinn together with the University of Leuven and the University of Münster started the new Master's Programme Public Sector Innovation and E-Governance (PIONEER) in September and the University of Liechtenstein, together with the University of Galway and the University of Münster, was successful with yet another Erasmus+ project, which will kick-off in January next year. I could continue this list with numerous other activities that have taken place this year, i.e. researcher exchanges (within the RISE_BPM project or individually), joint publications etc. It is just amazing to see how we gained momentum over the last years! If you read this report carefully, you may notice that the University of Waikato and the University of Manchester are not presented in detail. This is due to the fact that there have been organizational changes at Waikato and Chris Holland leaves the University of Man-

chester and joins Loughborough University next year. As you see, a network keeps changing and moving and I look forward to include their developments in our Annual Report next year.

This momentum has also manifested itself in the results of our partner survey that we conducted this year. We wanted to find out how satisfied our partners are within the network and with its services. In addition, we asked for a ranking concerning the importance of different collaboration opportunities within the network, namely research projects, teaching, staff exchange, publications, and funding, and with whom within the network they actually collaborate. The impressive results can be found in this Annual Report, have a look for yourself on page 12.

Gaining momentum also implies growing and introducing new members, when we have the feeling that they fit into our "ERCIS family". This year, we welcomed three new partner institutions, namely the University of Tallinn, the University of Galway, and the University of Wrocław, as well as three new personal members: Daniel Beverungen, Alessio Maria Braccini, and Stefano Za. It is great to have you on board! All of them officially signed their membership certificate at this year's Annual Workshop in Leiden. The University of Leiden joint

the ERCIS network last year and directly offered to host the Annual Workshop 2017. Thanks again, Michael Emmerich, for organising this meeting and taking care of everything. We spent two interesting days talking about various research topics with a focus on Data Science as we were guests at the Leiden Institute of Advanced Computer Science (LIACS). In addition, we had an absolutely fantastic boat trip through the canals in and around Leiden. This was the perfect balance of working and networking! Next year, we will head up far north, as our Annual Workshop 2018 will take place in Lulea.

Looking back at 2017, I am proud to see great events and achievements that were possible because of all of us being members and contributing to the ERCIS network. It is truly "ERCIS – it's what we make of it!"

All the best,

Jörg Becker

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8TH 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, this year's ERCIS Annual Workshop took place at the University of Leiden, in Leiden, The Netherlands. Michael Emmerich kindly hosted the workshop in August.

Following the traditional structure, the workshop with its main topic "Data Science" started with a welcome reception at the Academy Building in the city center of Leiden where the scientific director of the Leiden Institute of Advanced Computer Science (LIACS), Aske Plaat, held a welcome speech and presented the LIACS and Jaap van den Herik, director of the Leiden Center for Data Science (LCDS), presented the LCDS. In this year's workshop we had participants from Austria, Belgium, Estonia, France, Germany, Ireland, Italy, Liechtenstein, Lithuania, the Netherlands, Norway, Poland, Portugal, South Korea, Sweden, Switzerland, and the United Kingdom.

After a warm welcome on the part of the University of Leiden, the workshop started with Jörg Becker and Armin Stein reporting on ERCIS activities, ongoing activities and giving an overview about the evaluation of the network, which we did together with our partners this year.



Participants of the ERCIS Annual Workshop

Following Maribel Y. Santos from the University of Minho who talked about "Data Warehousing Architectures for Big Data" and how traditional multidimensional models can be migrated to a Big Data context. Ngoc Thanh Nguyen from the Wrocław University of Science and Technology presented their department of Information Systems, their main research directions and the organizational structures of their university before he signed the official Certificate of Membership to the ERCIS network.

After lunch the session was led by Michael Emmerich and Thomas Bäck of LIACS presenting Data Mining, Machine Learning

and Optimization Projects at LIACS. It was followed by Christopher Holland from Manchester Business School who described in his presentation "Mapping the Online Customer Journey as a Markov Chain: A Data Science Perspective" why Markov chains are a powerful method for modeling a search process.

In the afternoon Karsten Kraume, member of the Board arvato CRM Solutions at arvato AG, one of the ERCIS Advisory Board Members, and Markus Heuchert from the University of Münster, talked about "Customer service in Social Media and Data Privacy Issues" in context to the ERCIS Omni-Channel lab powered by Arvato. The lab is



concerned with practice-oriented research on innovative solutions and new concepts for omni-channel challenges.

To the end of the first workshop day Alexander Simons from the University of Liechtenstein presented the paper "Beyond crowd judgments: Data-driven estimation of market value in association football" which he published together with Markus Weinmann and Oliver Müller, one of the network's personal members.

The day closed with an excursion and workshop dinner on a boat trip around the city of Leiden.

The second workshop day started with a brief statement to the ERCIS Competence Centers by Armin Stein. Followed by Isabel Ramos from the University of Minho with her presentation "Impact of Information on Organizational Attention" which led to the question, how to improve organizational attention.

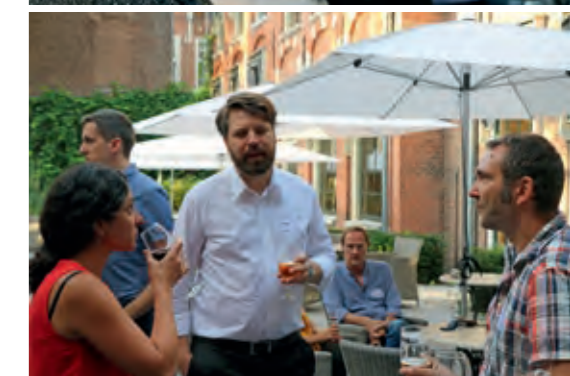
João Alvaro Carvalho, also belonging to the University of Minho, talked about "STAR.4.IST, Success, Theory, Action, Risk for Information Systems/Technologies" and gave us an insight into the project and its vision.

Also, we welcomed two more new associated partners to our network who signed

their official Certificates of Membership during this workshop, the National University of Ireland, Galway and the Tallinn University of Technology in Estonia. Therefore Robert Krimmer from the Tallinn University of Technology introduced the Ragnar Nurske Department of Innovation and Governance and gave an impression of the organizational structure and the research topics they are dealing with. Also Kieran Conboy from the National University of Ireland introduced himself and the Lero - Irish Software Centre on the basis of a topic they work on, "The Concept of Time in Software Research".

The last session was led by Stefan Stieglitz from the University of Duisburg-Essen who introduced two projects in his presentation "Crisis Communication and Social Media" that deal with the collective sense-making process in crisis situations and the utilization of social media for an integrated emergency management.

The workshop closed with an optional excursion to the coast or alternatively to the Space Expo Noordwijk, Europe's first permanent space exhibition.



SAVE THE DATE

The next Annual Workshop will take place in Luleå (Sweden), on August 22nd – 24th 2018.



FIRST GRADUATES OF MASTER'S PROGRAMME IN BIG DATA SYSTEMS

On June 28, 2017, the second graduation ceremony for the double-degree Master's programme in Big Data Systems (HSE, Russia) (www.hse.ru/en/ma/bigdata) and Information Systems Management (UAS Technikum Wien, Austria) was held at the Austrian Residence. Dr. Emil Brix, Ambassador of Austria in Moscow, gave the opening speech. During the reception, he congratulated graduates on successfully completing the programme and stressed the importance of cooperation between the universities for multi-cultural and professional communication.

The programme is focused on the value aspect of Big Data for large enterprises and the implementation of Big Data technology in the enterprise. It provides students with knowledge and understanding of fundamental principles and technological components of Big Data, preparing them for a career within companies or in scientific research.

NEW ERCIS MEMBER



Tilo Matzner

Welcome to our newest ERCIS member: Tilo Matzner, born in December 2016, officially joined the network in 2017 when he received his ERCIS outfit.

UNIVERSITY OF LIECHTENSTEIN RELEASES SECOND AIS GLOBAL INFORMATION SYSTEMS EDUCATION REPORT



In his role as Vice President for Education at the Association for Information Systems (AIS), Prof. Dr. Jan vom Brocke has released the second collection of global information systems education in collaboration with Dr. Markus Weinmann (University of Liechtenstein), Prof. Dr. Heikki Topi (Bentley University, Waltham, Massachusetts, USA), and Prof. Dr. Bernhard Tan (National University of Singapore). This report, the most comprehensive collection of curricula in the field of digitalization worldwide, contains more than 3,000 courses offered in more than 800 programs in 73 countries. By editing this report, the University of Liechtenstein takes a leading role in the important field of competencies in the digital economic environment. SpringerNature will publish the report for 2018, currently in preparation, as a book to be presented globally (<https://goo.gl/X44P3n>).



10TH EUROSYMPOSIUM

On 22nd of September 2017, Department of Business Informatics organized an annual conference, the 10th Eurosymposium 2017, under auspices of the AIS SIGSAND group. The participants, including the keynote speakers, Prof. Frank Land and Prof. Chrisanthi Avgerou, presented 11 papers. The papers were published in the Springer LNBIP series.

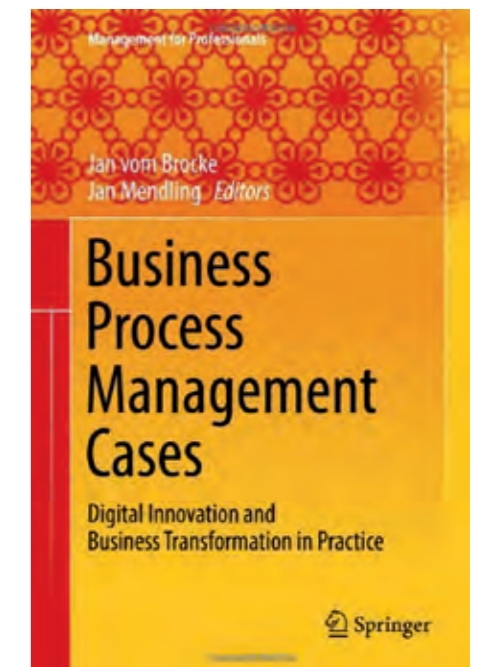
Since October 2016 – a new innovative specialization – Business Informatics has been released on Bachelor studies. It is a specialization made in cooperation with business partners that were involved in

programme creation. At the last semester, the studies are carried out in the dual mode – two days a week of studies at University and three days a week internship in Pomerania IT firms cooperating with the specialization within Panel of Business Partners.

The Department of Business Informatics applied with a success for a grant regarding cooperation between industry and academia, concerning the student traineeships in IT firms.

UNIVERSITY OF LIECHTENSTEIN PUBLISHES NEW BOOK, BUSINESS PROCESS MANAGEMENT CASES: DIGITAL INNOVATION AND BUSINESS TRANSFORMATION IN PRACTICE (MANAGEMENT FOR PROFESSIONALS)

Prof. Dr. Jan vom Brocke (Hilti Chair for Business Process Management, University of Liechtenstein) and Prof. Dr. Jan Mendling (Deputy Head of the Department of Information Systems and Operations, WU Vienna), have collaboratively published the book, BPM – Cases, with Springer-Verlag. Numerous authors and BPM experts, including many ERCIS partners, present real-life cases in the field of BPM. Best-practice examples and insights retrieved from organizations and companies on how to innovate and transform business using innovative technology are presented in the book (<http://www.bpm-cases.com>).



THE COOPERATION BETWEEN MÜNSTER AND ERCIS PARTNER WAIKATO MANAGEMENT SCHOOL, NEW ZEALAND, HAS BROUGHT ALONG THE FOLLOWING BOOK PUBLICATION:



G. Vossen, F. Schönthaler, St. Dillon: The Web at Graduation and Beyond – Business Impacts and Developments; Springer International Publishing, Cham, Switzerland, 2017

This book provides a comprehensive treatment of the rapidly changing world of web-based business technologies and their often-disruptive innovations. The history of the Web is a short one. Indeed many college graduates today were not even born when the Web first emerged. It is therefore an opportune time to view the Web as having reached the point of graduation. The Web has led to new ways in which businesses connect and operate, and how individuals communicate and socialize; related technologies include cloud computing, social commerce, crowd sourcing, and the Internet of Things, to name but a few. These developments, including their technological foundations and business impacts, are at the heart of the book. It contextualizes these topics by providing a brief history of the World Wide Web, both in terms of the technological evolution and its resultant business impacts. The book was written for a broad audience, including technology managers and students in higher education.

SAP NEXT-GEN INNOJAM

On September 2nd and 3rd, the SAP Next-Gen team from Moscow and Waldorf run the SAP Next-Gen InnoJam, “SAP Leonardo for Space Exploration and Earth Observation”, together with the Institute of Medical-Biological Problems of the Russian Academy of Science and International Space University (Strasbourg, France).

Overall 20 participants from eight universities (University of Münster, Higher School of Economics Moscow and Nizhny Novgorod, ITMO University, Russian Oil&Gas University n.a. Gubkin, Belgorod State Technological University, Voronezh State University, MGIMO University), split in 3 teams, were tackling for 30 hours challenges related to using AI/ML, IoT and space observation facilities to fight global disasters such as massive floods and fires.



SAP NEXT-GEN LABS

The first Interconnected Academic Next-Gen Lab, located at the University of Münster, and the Higher School of Economics in Moscow and Nizhny Novgorod – was officially launched on May 16, 2017. The programme is coordinated by SAP Next-Gen, which significantly contributes to its performance.

NEW ERCIS MEMBERS



The network keeps growing! We are very happy to welcome three new institutional members:

The Tallinn University of Technology, expanding our network to Estonia. We are happy to have Prof. Robert Krimmer on board, who is a renowned researcher in the area of eGovernment.

The Wroclaw University of Science and Technology, adding a second partner to Poland, where we become more and more visible together with our long-term partner Prof. Stanislaw Wrycza from the University of Gdansk. We are happy to welcome Prof. Ngoc Thanh Nguyen, who worked together with Prof. Gottfried Vossen, ERCIS Director at the Headquarters in Münster.

The University of Ireland, Galway. After seven years, we are happy to welcoming a new Irish partner with Prof. Kieran Conboy. Kieran has tight relations to Jan vom Brocke and the University of Liechtenstein, which is a perfect basis for fruitful future collaborations!

We additionally accepted three new personal members in our network. Prof. Dr. Stefano Za from the LUISS Guido Carli University in Rome, Italy, and Prof. Dr. Alessio Maria Braccini from the Tuscia University, Viterbo, Italy, both share a long-term relation with the network, and we are happy to now officially have them as part of ERCIS! Prof. Dr. Daniel Beverungen moved from the Headquarters in Münster to the University of Paderborn, where he keeps the ERCIS spirit alive and growing.

You can find more information about our new members in the respective sections of this report.

MYDESIGNPROCESS.COM – TOOL FOR DESIGN SCIENCE RESEARCH



MyDesignProcess.com, an internet-based platform that supports the holistic management of design processes, has been developed collaboratively by the Institute of Information Systems at the University of Liechtenstein, the Karlsruhe Institute of Technology, and the German Research Center for Artificial Intelligence. Users can manage projects; plan, document and analyze design activities; and share their processes with others to improve projects, especially those that are intended for publication. The project is conducted by Prof. Dr. Jan vom Brocke and Prof. Dr. Stefan Seidel (both University of Liechtenstein), Prof. Dr. Alexander Mädche (Karlsruhe Institute of Technology), and Dr. Peter Fettke (German Research Center for Artificial Intelligence). The leading developer is Michael Gau (University of Liechtenstein). The project was officially released at the DESRIST 2017 in Karlsruhe.

EVALUATION – THE VIBE OF THE NETWORK

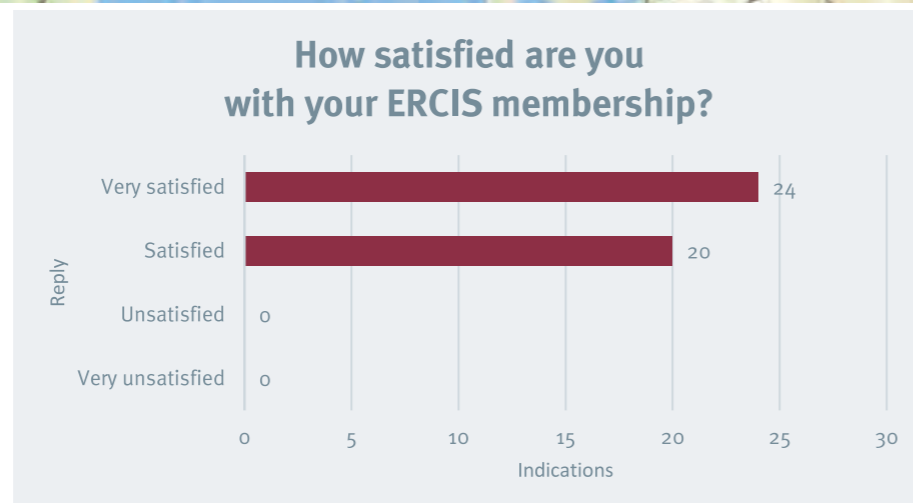


Joint ERCIS projects and publications – <http://www.ercis.org/go/map>

ERCIS MEMBER SURVEY

The first ERCIS member survey, conducted in January 2017, was intended to better understand the expectations and wishes of our academic members, to better understand the ties between our members, and to better understand the various means of collaboration among them.

All in all, we received 44 complete responses from our partners, which covers the complete network. The most important question addressed the overall satisfaction with the network, which was evaluated using a four point likert scale question: “How satisfied are you with your ERCIS membership?” Results show that all our members are satisfied or very satisfied with their membership in the network.



We also asked our members for ways to improve the network performance. One of the most often stated remarks was the request to stimulate the more silent partners to show a more active participation. Furthermore, joint PhD education became an im-

portant aspect, which we are working on. Our partners also stressed that applying for funding by the European Commission is one of the core concepts. Here again, we are gaining momentum and become more successful, as our track record shows.

The map [to the left] depicts the way our European partners work together. Black and blue lines indicate joint research projects, whereas red lines indicate joint publications.

We plan to repeat the survey biennially, to monitor the progress of the network.

TESTIMONIALS ON THE NETWORK



Jan Mendling, Vienna University of Economics and Business, Austria: “ERCIS is an excellent way to make personal research ties explicit and externally visible.”



Stefan Stieglitz, University of Duisburg-Essen, Germany: “ERCIS offers potential to cooperate with colleagues and it generates a feeling of ‘belonging together’. [...] ERCIS is an active network with people actually working together on projects they care about instead of just framing themselves with the formal membership.”



Oihab Allal-Chérif, KEDGE Business School, France: “It’s [an] active [network], with high value researchers sharing their projects and inviting others or participate if interested [...]. ERCIS is a community where people share their concerns and help each other despite being in different institutions.”



Bjørn Erik Munkvold, University of Agder, Norway: “[ERCIS is an] excellent arena for networking with the European IS research community.”



Kęstutis Kapočius, Kaunas University of Technology, Lithuania: “The ERCIS is a very well organized and managed network that is continuously moving forward.”



Isabel Ramos, University of Minho, Portugal: “ERCIS means opportunities for internationalization of teaching and research efforts. It means opportunities to collaborate and interact with European colleagues and friends. It means a certification of the quality of work we do.”



Eduard Babkin, Higher School of Economics Nizhny Novgorod, Russia: “ERCIS means a distributed environment of IS professionals for seeking mutual beneficial activities and facilitate scientific collaboration.”



ABOUT THE INSTITUTION

The Institute of Business-to-Business Marketing (IAS) is part of the ERCIS Headquarters located in Münster and represents the first senior professorship under the roof of the Marketing Center Münster (MCM).

Business-to-Business Marketing is traditionally the main research area of the IAS. In addition, the research program is continuously expanded to other interesting and current areas of research, such as the emergence of dominant designs and innovation management. Parts of the research program are realized with the help of research grants from government and industry.

The IAS has recently started to extend scenario analysis techniques in various research projects together with the University Hospital Muenster, the city and the region.

Beyond high-quality research, the IAS has always defined itself through outstanding educational efforts. We maintain close

ties with partners from a variety of industries and academic institutions all over the world to offer our marketing students compelling lectures and extraordinary seminars, including e-learning.

This winter semester the IAS offers a discussion program labeled “Meet the Leader” on various topics, starting with a gender topic – “Women in Management”. The first leader is Prof. Dr. Ann-Christin Achleitner, member of seven advisory boards of DAX-companies.

RESEARCH TOPICS

Our research mainly focuses on topics from Industrial Marketing (B2B Marketing). Besides that we are on the way to develop improved solutions for scenario analysis evaluations.

CURRENT RESEARCH PROJECTS

As the majority of research projects is funded institutionally, the IAS collaborates closely with industrial companies and practice-oriented associations to gener-

ate knowledge with a direct impact for the industry. Further research is focused on relevant topics in the international field of Marketing and conducted in the course of dissertation projects.

In addition to that, we use our expertise in a research project to reduce the risk structures of international large scale projects such as Desertec.

Furthermore, the IAS conducts a scenario analysis project in order to further develop the future strategy of the City of Muenster. Although not a core marketing topic, we use our expertise in multivariate methodology to provide a substantial contribution to the goals of the project.

Moreover, the IAS is part of the leading-edge cluster “it’s OWL”. In collaboration with industrial companies located in eastern Westphalia, the IAS continuously expands its expertise in multivariate methodology by developing a statistical method that is able to test the acceptance of technological complex innovations.



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PUBLICATIONS/DISSERTATIONS

Todenhöfer, Lydia: Participation Patterns of Sharing Systems – A Cross Sectoral Comparison of the Drivers of Demand and Supply in the Sharing Economy

Buff, Philipp: Der Effekt der Präsentationsform auf die Prognosefähigkeit frühzeitiger Konzepttests

We continue to deliver relevant insights with focus on negotiations research and the emergence of dominant designs.



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 eight post-docs 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 a research area, which 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 through the use of Information and Communication Technology (ICT). E-Government links the field of the 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



Intentional Forgetting in Organizations: Forgetting Confidently is a tandem project of the University of Münster with the disciplines Organisational & Business Psychology (Guido Hertel) and Information Systems (Jörg Becker) which focuses on studies on motivational factors that can interfere or promote intentional forgetting in organizations. Intentional forgetting is operationalized by the extent of the utilization of information systems. Information systems are considered to be a structural form of intentional forgetting in organizations that provide users with relevant information so that less relevant information can fade into the background (gradual forgetting). In this way, the use of information systems can save resources and increase the quality and speed of decisions by focusing on the essential decision criteria.

For more information, please visit: <https://www.getrost-vergessen.de/>



Digital Me aims to provide women with a browser-based and target group-specific offer for the STEM (science, technology, engineering, and mathematics) professions. In a virtual world environment, the participants aged 15 to 17 can find information and decision-making aids as well as games. In the end they know the content and career opportunities in selected IT professions so that they can consciously choose their studies and professions. In this way, Digital Me strives for a higher participation of young women in occupations with IT content and their leadership positions.

For further information, please visit: <https://www.digital-me.info/>

AWARDS

Prof. Dr. Dr. h.c. Dr. h.c. Jörg Becker has been nominated for the Professor of the Year 2017 title of the UNICUM foundation.



Best Prototype Award: *Betzing, J. H., von Hoffen, M., Plenter, F., Chasin, F., Matzner, M., & Becker, J. (2017).* One Plug at a Time — Designing a Peer-to-Peer Sharing Service for Charging Electric Vehicles.

TDWI Award 2017 (1st Place) of the TDWI Germany e.V., the Chemnitz University of Technology and the INFOMOTION GmbH for Benjamin Barann.

ER Demos Tool Award: *Riehle, D. M., Höhenberger, S., Brunk, J., Delfmann, P., & Becker, J. (2017).* [em] — Process Analysis using a Meta Modeling Tool. 36th International Conference on Conceptual Modeling (ER2017), Valencia, Spain.

SELECTED PUBLICATIONS

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

Betzing, J. H., von Hoffen, M., Plenter, F., Chasin, F., Matzner, M., & Becker, J. (2017). One Plug at a Time — Designing a Peer-to-Peer Sharing Service for Charging Electric Vehicles. In Proceedings of the 13. Internationale Tagung Wirtschaftsinformatik (WI2017), St. Gallen, Schweiz, 1275–1278.

Carnein, M., Heuchert, M., Homann, L., Trautmann, H., Vossen, G., Becker, J., & Kraume, K. (2017). Towards Efficient and Informative Omni-Channel Customer Relationship Management. In Proceedings of the 6th International Workshop on Modeling and Management of Big Data (MoBiD '17), Valencia, Spain. (Accepted)

Distel, B., & Becker, J. (2017). All Citizens Are the Same, Aren't They? — Developing an E-government User Typology. In Janssen, M., Axelsson, K., Glassey, O., Klievink, B., Krimmer, R., Lindgren, I., Parycek, P., Scholl, H. J., & Trutnev, D. (Eds.), Electronic Government. 16th IFIP WG 8.5 International Conference, EGOV 2017, St. Petersburg, Russia, September 4–7, 2017, Proceedings. Lecture Notes in Computer Science (LNCS): Vol. 10428. Springer.

Jannaber, S., Riehle, D. M., Delfmann, P., Thomas, O., & Becker, J. (2017). Designing A Framework for the Development of Domain-Specific Process Modelling Languages. In Maedche, A., vom Brocke, J., & Hevner, A. (Eds.), Designing the Digital Transformation (pp. 39–54). Lecture Notes in Computer Science: Vol. 10243. Berlin/Heidelberg, Germany: Springer.

Becker, J., Clever, N., Holler, J., & Neumann, M. (2017). Business Process Management in the Manufacturing Industry — ERP-replacement and ISO 9001 re-certification supported by the icebricks method. In vom Brocke, J., & Mendling, J. (Eds.), Business Process Management Cases. Digital Innovation and Business Transformation in



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Practice (pp. o.A.). Berlin: Springer-Verlag. (In press)

DISSERTATIONS

Bräuer, Sebastian Alexander: Electric Vehicle Battery Second Use – Future Trade, Business Models, and Information Systems Design

Klör, Benjamin: Building a Model-Driven Decision Support System for Repurposing Electric Vehicle Batteries – Design and Evaluation



TMF-Workshop in Berlin about MDM-Portal (June 17, 2016) with participants from Germany, Austria and Belgium, organized by Institute of Medical Informatics

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 has been 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 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 (NGS) 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 a key for interoperability. Specific research topics are data models with semantic annotations and methods for metadata management. Application fields are electronic health record (EHR) and electronic data capture (EDC) systems.

CURRENT RESEARCH PROJECTS

Health Informatics (eHealth)

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 Infra-

structure. To date it contains **14.000+ data models** and **1.500.000+ terms** with semantic annotations. These data models are available in 18 download formats, in particular CDISC ODM, HL7 FHIR and openEHR ADL. Recently the system was presented at the world congress of Medical Informatics (MEDINFO) in Hangzhou, China. The IMI project mobile patient questionnaires (<http://mopat.uni-muenster.de>) integrates EHR and patient reported outcomes. Recently this software tool was applied successfully in a clinical study in 10 European countries with multilingual data collection.



Biomedical Informatics

MDS-RIGHT, a European project coordinated by Prof. Joop Jansen (Nijmegen Centre for Molecular Life Sciences), is progressing to analyse mutations in Myelodysplastic Syndrome (MDS). MDS-RIGHT assesses approximately 1.000 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.

In joint projects with Prof. Frank Rosenbauer (Institute of Molecular Tumor Biology) new algorithms to analyse STARR-seq, 4C-seq as well as ChIP-seq data are being developed. Together with Prof. Birgit Burkhardt (Pediatric Oncology) NGS data from lymphoma patients are being analysed (funded by German Cancer Aid foundation).

PUBLICATIONS

Sandmann S, de Graaf A, Karimi M, van der Reijden B, Hellström-Lindberg E, Jansen J, Dugas M.: Evaluating Variant Calling Tools for Non-Matched Next-Generation Sequencing Data. *Scientific Reports – Nature Publishing Group* 2017;7:43169. PMID: 28233799

Sandmann S, de Graaf A, van der Reijden B, Jansen J, Dugas M.: GLM-based Optimization of NGS Data Analysis: a Case Study of Roche 454, Ion Torrent PGM and Illumina NextSeq Sequencing Data. *PLoS One* 2017 Feb 21;12(2):e0171983. PMID: 28222155

Dugas M.: *Medizininformatik*
Springer Vieweg, Berlin Heidelberg 2017.
ISBN 978-3662533277



Julian Varghese, Maren Kleine, Sophia Isabella Gessner, Sarah Sandmann, Martin Dugas.: Effects of Computerized Decision Support System Implementations on Patient Outcomes in Inpatient Care: A Systematic Review. *JAMIA* 2017 (in press).

Gessner S, Storck M, Heggemann S, Dugas M, Soto-Rey I.: Automated Transformation of CDISC ODM to OpenClinica. *Stud Health Technol Inform.* 2017;243:95-99. PMID: 28883178

Storck M, Zeidler C, Rehr M, Riepe C, Dugas M, Ständer S, Soto-Rey I.: Validation of Pruritus Measures Gathered with the Electronic Patient-reported Outcome System MoPat. *Acta Derm Venereol.* 2017 Sep 20. PMID: 28929169

Bruland P, Dugas M.: S2O – A software tool for integrating research data from general purpose statistic software into electronic data capture systems. *BMC Med Inform Decis Mak.* 2017;17(1):3. PMID: 28061771



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DISSERTATIONS/HABILITATIONS

Dr. Michael Storck.: ODMSummary: A Tool for Automatic Structured Comparison of Multiple Medical Forms Based on Semantic Annotation with the Unified Medical Language System.

UNIVERSITY OF MÜNSTER – CHAIR FOR INFORMATION SYSTEMS AND LOGISTICS

› University of Münster www.wi.uni-muenster.de/scm



ABOUT THE INSTITUTION

Today's supply chains (SC) on the one side 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 adding process. On the other side, the digitalization of the supply chain opens new possibilities for fast savings and increased flexibility. Tackling these issues is the major objective of the Chair for Information Systems (IS) and Supply Chain Management (SCM), directed by Prof. Dr.-Ing. Bernd Hellingrath. Special focus lies in understanding current logistics and manufacturing issues, resolving them by applying and newly developing modeling and planning methods, e.g., Industrie 4.0 enabled predictive maintenance solutions. In this context, research is fostered by a culture of internationalization, exemplified by the growing number of international research partners and projects conducted.

RESEARCH TOPICS

Flexible Supply Chains: Planning the worldwide production footprint is a strategically crucial task for every company operating globally to stay competitive. Uncertainties in the business environment and local content regulations influence the optimal sourcing and production locations. Volatile exchange rates and customer demands in conjunction with a political regression to

protectionism require appropriate decision support tools. The research group develops planning approaches for the design of production networks in a globalized and volatile world.

Spare Part Management: The early identification of machine breakdowns by condition monitoring enables more precise planning and management of spare parts and maintenance services. The group focuses on approaches and data analytics methods for improved diagnostics and prognostics in predictive maintenance. Moreover, integrated as well as decentralized planning models for spare parts management are developed.

Industrie 4.0: Research regarding Industrie 4.0 aims to keep and enhance the competitive advantage of German manufacturing companies worldwide by increasing the capabilities of producing customer specific goods efficiently and effectively. The group is evaluating and developing new approaches and methods for production planning in this context. Results are not only presented in the German community, but were also discussed in a workshop held in Recife, Brazil.

Sales & Operations Planning: Sales and Operations Planning addresses cross-functional integration within a company and along the supply chain and is there-

fore a key factor for business success. The group investigates the state-of-the-art in S&OP and focuses on the development of concepts to facilitate efficient industrial applications. The research in this field is conducted in close collaboration with the Pontifical Catholic University of Rio de Janeiro.

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 severe consequences of natural disasters and terrorist threats, by the development of innovative solutions that are addressing the operational needs of practitioners dealing with crisis management. The chair is member of the review board and contributes to the development, application and evaluation of the test-bed methodology.

The research on spare parts management and predictive maintenance is embedded into the Brazilian-German project **I2MS2C** (Integrating Intelligent Maintenance Systems and Spare Parts Supply Chains). The chair focuses on decentralized coordination and data analytics methods [DFG 2012–2017; UFRGS Porto Alegre, UFSC Florianópolis, FURG Rio Grande]

EVENTS

The chair hosts the 4th International Conference on Information and Communication Technologies for Disaster Management. ICT-DM'2017 aims to bring together academics and practitioners who are involved in emergency services, ad hoc planning and disaster management and recovery.

Promoted and organized in cooperation with DWIH, BMBF, ERCIS and UPE Recife, the **Germany-Brazil Workshop on Information Systems in Logistics and Industrial Engineering** brought together the University of Münster and complementary strengths of several researchers from five northeastern Brazilian universities to discuss future collaborative projects, particularly concerning Industrie 4.0, Maintenance Planning, Digital Supply Chains and Energy Systems. On a second workshop, representatives of state government, industry and universities discussed opportunities for closing the gap between Industry and Academia in the area of Smart Supply Chains and Energy Systems.

The 14th International Conference on Information Systems for Crisis Response and Management (**ISCRAM2017**) aims at exploring all dimensions of the IS domain to improve and contribute to Crisis and Disaster Management. The chair organized a workshop, presented three papers and hosted a SCM track at the conference.

Prof. Hellingrath organized **Workshops at the VW Group**, in Ingolstadt, Germany and Beijing, China discussing how digitalization is affecting and will influence the automotive supply chain. Of special importance were the resulting consequences for procurement.

To strengthen existing collaborations, Prof. **Buarque (UPE Recife)** extended his Humboldt Fellowship to follow up Ph.D. co-supervisions, book co-authorship and establish further projects with ERCIS. Within the same scope, Prof. **Scavarda (PUC Rio de Janeiro)** visited the chair for an extended period (Dec. 2015 – Feb. 2017) to jointly research on Sales and Operations Planning.

PUBLICATIONS

de Siqueira Braga, D., Niemann M., Hellingrath B., de Lima Neto F.B. (2017). The Game of Trust: Using Behavioral Experiment as a Tool to Assess and Collect Trust-Related Data. In: Steghöfer JP., Esfandiari B. (eds) Trust Management XI. IFIPTM 2017. IFIP Advances in Information and Communication Technology, vol 505. Springer, Cham.

Fischer, Jan-Hendrik; Hellingrath, Bernd (2017). Global Production Network Design with Local Content Requirements Under Demand and Exchange Rate Uncertainty. In: Production and Operations Management Society 28th Annual Conference. Seattle, WA, USA.

Horstkemper, D., & Hellingrath, B. (2017). Information Systems for Production Planning and Control in the Context of Industrie 4.0 – Architectural Requirements and Development Perspectives. In Proceedings of the EUROMA 2017, Edinburgh, Great Britain.

Lechtenberg, S., Widera, A., & Hellingrath, B. (2017). Assessing Vendor Managed Inventory (VMI) for Humanitarian Organizations. In Proceedings of the 14th International Conference on Information Systems for Crisis Response And Management, Albi, France, 765–774.

Saalmann, P., & Hellingrath, B. (2017). Towards a Typology for Spare Parts Supply Chains based on Collaboration and Coordination Characteristics. In Proceedings of the Logistikmanagement, Stuttgart, Germany.

Scavarda, Luiz Felipe; Hellingrath, Bernd; Kreuter, Tobias; Thomé, Antonio Márcio Tavares; Seeling, Marcelo Xavier; Fischer, Jan-Hendrik; Mello, Raquel (2017). A case method for Sales and Operations Planning. A learning experience from Germany. In: Prod. 27 (spe), S. 92. DOI: 10.1590/0103-6513.219916.



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DISSERTATIONS

Cordes, A. (2017). Prozesse, Prognose und Planung in Ersatzteil-Supply-Chains für die zustandsorientierte Instandhaltung – Entwicklung eines Referenzprozessmodells, eines Nachfrageprognoseverfahrens und eines integrierten Planungsmodells am Beispiel der Maschinenbauindustrie

Pumpe, A. (2017): Total Landed Cost in der internationalen Lieferantenauswahl – Ein Vorgehensmodell zur effizienten Vorbereitung von Vergabeentscheidungen

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

› University of Münster www.wi.uni-muenster.de/jura.itm/hoeren



itm

ABOUT THE INSTITUTION

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 emphasises 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 the Faculty of Economics of the University of Münster. In 2002, 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 ITM since 1997. Due to international projects such as TIMBUS Prof. Hoeren has become recognised 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 Information, Telecommunication and Media Law is characterised as a cross-sectional matter, it cannot be fully covered by any of the traditional legal disciplines by itself. ITM, therefore, strives for interdisciplinary research and teaching activities.

CURRENT RESEARCH PROJECTS

Currently, ITM is involved in several EU-funded and national projects

ABIDA (Assessing Big Data) is 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 is managed by ITM and the Institute for Technology Assessment and System Analysis in Karlsruhe (ITAS). Furthermore, the Humboldt University of Berlin, the Technical University Dort-

mund, the Ludwig-Maximilians-University Munich as well as the University of Hannover are project partners. The project aims at monitoring and assessing current developments regarding Big Data, taking into account public opinion and bringing together expert knowledge. Several research groups will work on interdisciplinary in-depth studies, which will be assessed in expert workshops and a national symposium. Moreover, three citizens' conferences and a representative opinion survey are scheduled in order to ensure an extensive involvement of the public. On this basis all relevant issues will be analysed and evaluated to provide options for political decisions, further research and economic approaches as well as to point out possible alternatives. Initiated in March 2015, the project is scheduled for a period of 48 months.

Research Center for Industrial Property Rights: ITM also hosts the Research Center for Industrial Property Rights, which offers training and conducts research activities in

the field of industrial property rights.

ITS.APT (IT-Security Awareness Penetration Testing) is an interdisciplinary project promoted by the German Federal Ministry for Education and Research (BMBF). Since January 2015, the responsible try to develop a measuring dial for the IT-security awareness of IT-users. Because of the increasing number of appearing cyber-attacks, operators of critical infrastructure struggle to ensure IT-security. Up to now, they did not take into account how IT-users create risks by themselves. With the usage of special software, the project wants to answer the question to what extent IT-users influence the IT-security of a company or an institution. Regarding the research work, ITM focuses on aspects of liability law concerning the usage of such scale software. Besides, ITM gives expert advice to law related questions concerning the project.

Matters of Law in the German Research Network (DFN): The German Research Network (Deutsches Forschungsnetz / DFN) supports communication and the exchange of information or data between representatives of science, research, education and culture in national and international networks. Increasingly our DFN-members are being faced with issues regarding legal questions on liability, telecommunications and data protection. Therefore ITM acts as a legal consultant in terms of communication and data protection services.

RWTÜV Foundation Assistant Professorship of IT Law: This professorship promotes young researchers in the field of IT law. In fall of 2016, Prof. Dr. Nikolas Guggenberger, LL.M. (Stanford) obtained this position. His research focusses on law and innovation, specifically on the implications of blockchain technology, smart contracts and the automation of law.

AWARDS

Deutschland – Land der Ideen: „Ausgezeichneter Ort im Land der Ideen“.

DISSERTATIONS/HABILITATIONS

Corin Gittinger (2017): Die Grenzbeschlagnahme nach der Verordnung (EU) 608/2013 und die Rechtsstellung des Betroffenen.

Jan Heuer (2017): Die relative Testierfähigkeit – Zur Frage, ob die Komplexität einer letztwilligen Verfügung bei der Beurteilung der Testierfähigkeit zu berücksichtigen ist.

Bernard A. Karikari (2017): Big Data in der Automobilindustrie – die Erhebung von Fahrzeugfunktionsdaten als Rechtsproblem.

Florian Klein (2017): Personenbilder im Spannungsfeld von Datenschutzgrundverordnung und Kunsturheberrechtsgesetz.

Andre Moor (2017): Rechtsstellung des wissenschaftlichen Personals im Urheberrecht, Spannungsverhältnis von Wissenschaften und Wissenstransfer.

Melanie Overbeck (2017): Der Lichtbildschutz gemäß § 72 UrhG im Licht der Digitalfotografie.

Michael Thiesen (2017): Daten in der Erbmasse. Der digitale Nachlass zwischen Erbgang und Rechtsdurchsetzung.

Benjamin Wanning (2017): Direktmarketing im Licht der Europäischen Datenschutzgrundverordnung.

Elena Wiese (2017): Die EU-Richtlinie über den Schutz vertraulichen Know-hows und vertraulicher Geschäftsinformationen. Inhalt und Auswirkungen auf den gesetzlichen Schutz des Unternehmensgeheimnisses.



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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 informed society and economy. In particular 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 inter-related fields of research:

1. The Communication and 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, coordination and collaboration practices that are seen as central to the relationship between technology and organizational and societal changes. A prominent focus in our research is the examination of the material and affective aspects of organizational 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 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 in Digital Organizations consider when devising IT strategies? What are typical decisions made in IT/IS strategies? How to devise IT/IS strategies and how to align them with business strategies?
- **Digital Transformation and Technochange:** How to align changes of the IT-based infrastructure in Digital Organizations with organizational change? How to plan, con-

trol and coordinate large, complex and risky IT endeavours comprising a larger set of interrelated IT projects?

- **IT/IS Investment Evaluation and Control:** What is the business value of IT investments? What kind of IT investments should digital organizations make? How to decide on IT-investment alternatives? How to control the IT/IS investment portfolio for value delivery?
- **IT Outsourcing and Organization:** Which IT tasks can be outsourced and which to better keep in-house? In case of outsourcing, what are appropriate sourcing modes? In the case of keeping the IT/IS function in-house, how to best organize it in digital organizations?

The research group's aim is to provide guidance to senior executives by offering recommendations that are both, theoretically well founded and carefully validated in industry practice.

3. The Interorganizational Systems group studies the evolution of information infrastructures, such as electronic markets or platforms, over long periods of time. We take a particular interest in 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, as the development of infrastructures involves commitment and coordination of diverse actors,
- how standards, which may affect strategic interests, can be developed and widely diffused,
- how industry structures, specifically structures of intermediation, are transformed alongside the proliferation of ICT.

We study these issues in the context of international accreditation agencies, the health care sector, the tourism and the academic publishing industry.

CURRENT RESEARCH PROJECTS

Project management and power dynamics
The growth of on one hand, the distributed forms of collaborating, and the projectification of work, on the other hand, have been also accompanied by increase in conflicts and tensions in projects that involve geographically distributed participants. While, power dynamic is inherent to such processes, it is also manifested and performed in novel ways in such technology-mediated contexts. Gaining insights into how such complex relationships are being balanced can offer important contributions to IT project management. (PI: Aleksandar Dordevic)

Enterprise Social Networks and workplace analytics

The emergence and proliferation of new ICTs such as Enterprise Social Networks have brought changes beyond the promises for improved connectivity and team productivity. In particular, while mediating and transforming many organizational process, these technologies also make them visible and more amenable to analysis. We use a plethora of analytical perspectives to delineate important aspects of aggregate data from these platforms, and seek to turn it into sensible and actionable indicators for improving decision-making and managing workplace processes. (PI: Joschka Hüllmann)

Online search in an online multi-channel environment

In order to explore online search patterns, we have conducted a series of experiments in which test persons look for airline tickets for specified routes and dates, which complement the analysis of online panel and airline customer data.

The empirical work is used to critically examine established concepts of search behaviour based on search economics, the

customer search funnel, consideration set and customer journey. (PI: Julia Jacobs)

IT service management

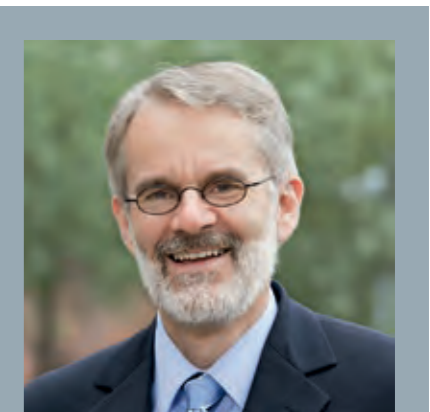
In today's digital business environments, IT has to respond flexibly and quickly to changing business conditions while at the same time has to ensure secure and stable IT operations. In practice, the paradigm of IT service management (ITSM) is the approach of choice for realizing reliable operations and the concept of an IT service at its core. Our research is concerned with clarifying this concept and with fleshing it out by developing guidelines and recommendations for specifying and contracting IT services. (PI: Christian Remfert)

Member – network relations: On identities, organizational becoming and sensemaking
AACSB is an international accreditation agency organized as a club with a network administration organization. AACSB emphasizes formative evaluation, in order to facilitate its members learning and continuous development. Our research studies the precarious alignment between the identities of highly diverse members and AACSB's standards and values, which are subject to an ongoing collective review and development, and are enacted by peer review teams throughout accreditation or continuous improvement visits. (PI: Sophie Wohlhage)

SELECTED PUBLICATIONS

Jacobs, J., Klein, S., Holland, C., & Benning, M. (2017). Online Search Behavior in the Air Travel Market: Reconsidering the Consideration Set and Customer Journey Concepts. In Proceedings of the 50th HICSS. IEEE Computer Society.

Klein, S., & Schellhammer, S. (2017). Medication infrastructure development in Germany. In M. Aanestad, M. Grisot, O. Hanseth, & P. Vassilakopoulou (Eds.), Information Infrastructures within European Health Care – Working with the Installed Base. Springer International Publishing.



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Ponte, D., Mierzejewska, B. I., & Klein, S. (2017). The transformation of the academic publishing market: multiple perspectives on innovation. *Electronic Markets – The International Journal*, 27(2), 97–100.

Schellhammer, S., Klein, S., & Ebner, E. (2017). Primary Prevention for Employees in the Information Age Organization. *Health Policy and Technology*, 6(1), 72–82.

Teubner A., & Remfert C. (2017). Giving IT Services a Theoretical Backing. In: Yamamoto S. (eds): Proceedings of the HMI 2017 – Human Interface and the Management of Information: Information, Knowledge and Interaction Design. Lecture Notes in Computer Science, Vol 10273. Springer, Cham.



ABOUT THE INSTITUTION

Since 1997, the Chair of Practical Computer Science has been led by Prof. Dr. Herbert Kuchen. He is responsible for 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, Parallel Programming, and E-Assessment.

CURRENT RESEARCH

We explore cross-platform development approaches to develop mobile applications for business purposes (so-called Business Apps). We look specifically into model-driven approaches to app development. Our MD² framework allows modeling an app using a domain-specific language (DSL) and automatically generates Android and iOS apps from this specification. In addition, a visual app development language called MAML empowers non-technical users to model apps in a process-oriented fashion. Based on the MD² framework, apps can thereby be created without writing a single line of code. Current research focuses on applying our model-driven frameworks to emerging mobile device categories such as smartwatches.

Experience shows that the development of parallel programs is an elaborate and time-consuming task. The Muenster Skeleton Library (Muesli) is a collection of high-level concepts that facilitate the development of parallel programs. The library contains so-called algorithmic skeletons, i.e. frequently recurring parallel programming patterns, which can be easily and efficiently combined to develop parallel applications. Recently, we have extended Muesli for hybrid and heterogeneous architectures and have evaluated simultaneous executions on CPUs and GPUs. Moreover, we have investigated the parallel implementation of swarm intelligence-based metaheuristics, such as Particle Swarm Optimization and Fish School Search, with algorithmic skeletons.

Another research field is the automatic generation of test cases based on the symbolic execution of Java bytecode. In particular, we have extended the Münster 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. In addition, we have developed approaches relevant to practice for improving the software development process for projects involving the Spring framework and explored the potential of software containers for testing.

The symbolic Java virtual machine (SJVM) of Muggl is also generalized into the runtime for a novel programming language, the Münster logic-imperative language (Muli). Muli seamlessly integrates constraint (logic) programming and object-oriented pro-

gramming by extending the Java programming language. This paradigm integration results in simpler development of (business) applications that require search, as constraints are stated declaratively using familiar Java syntax and solved implicitly by the SJVM runtime.

In the field of matching markets, we study the problem of assigning children to day care facilities. In particular, motivated by the German day care market, we discuss the possibility of heterogeneity in the strength of preferences of the day care facilities, in view of private versus public facilities. In order to meet the requirements of this two-sided market, we combine known market mechanisms while focusing on game theoretical properties such as stability and Pareto efficiency. An extensive survey on requirements of day care facilities around Münster has been conducted

PUBLICATIONS

Bünder, H., Rieger, C., Kuchen, H. (2017). A Domain-specific Language for Configurable Traceability Analysis. In Proceedings of the 5th International Conference on Model-Driven Engineering and Software Development (MODELSWARD 2017), Porto, Portugal, 374–381.

Bünder, H., Rieger, C., Kuchen, H. (2017). A Model-Driven Approach for Evaluating Traceability Information. In Proceedings of The Third International Conference on Advances and Trends in Software Engineering (SOFTENG 2017), Venice, Italy, 59–65.

Bünder, H. (2017). A UML-Agnostic Migration Approach: From UML to DSL. Softwaretechnik-Trends, Gesellschaft für Informatik e.V. (2017), Volume 37(2).

Dageförde, J., Kuchen, H. (2017). An Operational Semantics for Constraint-logic Imperative Programming. In Proceedings of 25th International Workshop on Functional and Logic Programming, Würzburg, Germany.

Fuchs, A., Kuchen, H. (2017). Unit Testing of Database-Driven Java Enterprise Edition Applications. In Proceedings of the

11th International Conference on Tests and Proofs, Marburg, Germany.

Gorlatch, S., Kuchen, H. (2017). Guest Editors' Note: Special Issue on High-Level Parallel Programming and Applications. Parallel Processing Letters, 27(1), 1–2.

Gorlatch, S., Kuchen, H. (2017). Guest Editorial: High-Level Parallel Programming with Algorithmic Skeletons. International Journal of Parallel Programming, 2017. (In press)

Majchrzak, T. A., Dageförde, J. C., Ernsting, J., Rieger, C., Reischmann, T. (2017). How Cross-Platform Technology Can Facilitate Easier Creation of Business Apps. In Rezaei, S. (Ed.), Apps Management and E-Commerce Transactions in Real-Time (pp. 104–140). Hershey PA: IGI Global.

Menezes, B., Wrede, F., Kuchen, H., Buarque, F. (2017). Parameter Selection for Swarm Intelligence Algorithms: Case Study on Parallel Implementation of FSS. In Proceedings of the 4th IEEE Latin American Conference on Computational Intelligence (LA-CCI '17), Arequipa, Peru. (Accepted)

Rieger, C. (2017). Business Apps with MAML: A Model-Driven Approach to Process-Oriented Mobile App Development. In Proceedings of the 32nd Annual ACM Symposium on Applied Computing, Marrakesh, Morocco, 1599–1606.

Rieger, C., Majchrzak, T. (2017). Conquering the Mobile Device Jungle: Towards a Taxonomy for App-Enabled Devices. In Proceedings of the 13th International Conference on Web Information Systems and Technologies (WEBIST 2017), Porto, Portugal, 332–339.

von Hof, V. (2017). Leveraging Test Case Generation in the Testing Process — An Integration of Human Oracles with Derived Oracles. In Fujita, H., Selamat, A., & Omatu, S. (Eds.), New Trends in Intelligent Software Methodologies, Tools and Techniques (pp. 480–489). Frontiers in Artificial Intelligence and Applications: Vol. 297. Amsterdam, The Netherlands: IOS Press.

von Hof, V., Fögen, K., & Kuchen, H. (2017). Detecting Spring Configurations Errors. In Shin, S. Y., Shin, D., & Lencastre, M. (Eds.), SAC '17 Proceedings of the Symposium on Applied Computing. New York, NY, USA: ACM, 1505–1512.

Wrede, F., Ernsting, S. (2017). Simultaneous CPU-GPU Execution of Data Parallel Algorithmic Skeletons. International Journal of Parallel Programming, <https://doi.org/10.1007/s10766-016-0483-9>.

Wrede, F., Menezes, B., Kuchen, H. (2017). Fish School Search with Algorithmic Skeletons. International Journal of Parallel Programming. (Submitted)

Wrede, F., Menezes, B., Pessoa, L. F., Hellingrath, B., Buarque, F., Kuchen, H. (2017). High-level Parallel Implementation of Swarm Intelligence-based Optimization Algorithms with Algorithmic Skeletons. In Proceedings of the International Conference on Parallel Computing (ParCo '17), Bologna, Italy.

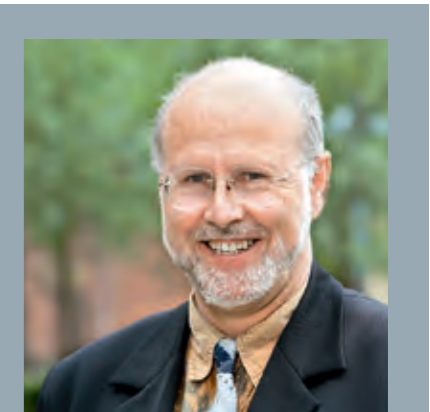
Wrede, F., von Hof, V. (2017). Enabling Efficient Use of Algorithmic Skeletons in Cloud Environments: Container-based Virtualization for Hybrid CPU-GPU Execution of Data-parallel Skeletons. In Shin, S. Y., Shin, D., & Lencastre, M. (Eds.), SAC '17 Proceedings of the Symposium on Applied Computing (pp. 1593–1596). New York, NY, USA: ACM.

BEST PAPER AWARDS

Best Paper Award for the paper “A Model-Driven Approach for Evaluating Traceability Information” by H. Bünder, C. Rieger, H. Kuchen at the 3rd International Conference on Advances and Trends in Software Engineering, Venice, Italy, April 2017

EVENTS

Prof. Kuchen served on the program committees of the following international conferences: LA-CCI 2017, Arequipa, Peru, WFLP 2017, Kiel, Germany, HLPP 2017, Valladolid, Spain, ParCo 2017, Bologna, Italy, PASCO 2017, Kaiserslautern, Germany, INFOCOMP 2017, Venice, Italy, HLPGPU 2017, Stockholm, Sweden, SBD 2017, Raleigh, USA, SOFTENG



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2017, Venice, Italy, SACLA 2017, Magaliesburg, South Africa.

Moreover, he was:

Guest editor of International Journal of Parallel Programming, Special Issue on High-Level Parallel Programming with Algorithmic Skeletons, 2017.

Guest editor of Parallel Processing Letters 27(1), 2017.

Member of the Scientific Advisory Board of IMDEA-Software, Spain.

Managing Director of the Institute for Applied Informatics at the University of Münster.

Editor of the Open Journal of Web Technologies.



ABOUT THE INSTITUTION

The group Quantitative Methods for Logistics in the Department of Information Systems at the University of Münster is headed by Stephan Meisel, who serves as an assistant professor. The group additionally has one postdoctoral researcher and three doctoral students. Activities in both research and teaching primarily focus on dynamic decision-making in logistics and energy systems. Recently business operations within these fields have been subject to major challenges such as increasing resource prices, electronic commerce, renewable energies, real-time tracking and tracing as well as security issues. The group addresses these challenges by developing new models and methods that allow for best possible decision-making in today's business operations.

As a natural counterpart of the complexity of modern decision processes, both the

models and the methods developed need to draw on a number of different scientific disciplines. Consequently the activities of the group are highly interdisciplinary – combining and integrating techniques from fields such as mathematical optimisation, artificial intelligence, computer simulation, stochastic processes and databases.

MAIN RESEARCH TOPICS

The research activities of the group pursue two main goals. On the one hand the focus is on modeling operational decision problems and solving them by application of state-of-the-art methods. On the other hand the group's research also aims at advancing the algorithmic state-of-the-art by developing new methods that enable more efficient decision-making.

As a response to the needs of today's processes in logistics and energy systems, the research activities revolve around the area

of Anticipatory Optimisation for Dynamic Decision-Making, which serves as a general framework for studying multistage decision problems under uncertainty.

Uncertainty has become one of the main characteristics of real-world business processes. Today's companies continuously receive new information in terms of, e.g., customer orders, price changes or availability of resources such as renewable energy. Due to technological innovations such as GPS, mobile communication and Big Data, companies are able to use this newly arriving information for continuous adaptation of their current operational plans.

However, any plan revision that is made now does affect the future evolution of the business process under consideration. Coordination of planning decisions over time becomes the crucial point in adapting an operational process. Anticipatory Opti-

misation takes into account the decision maker's uncertainty about the future and aims at an optimal sequence of planning decisions within a given logistics process.

RESEARCH PROJECTS

Most of the current research projects focus on multistage decision problems within a specific application domain. The main projects currently are:

Energy Storage Management

Energy storage management has become a crucial issue with renewable energies. Sources of renewable energy such as wind or solar, are intermittent and energy prices tend to be varying over time. Therefore, companies relying on renewable energy make use of energy storage devices.

The main research question is; how to repeatedly make good decisions about how much energy to store and how much energy to buy from electricity providers.

Together with our research partner at Princeton University, we have been working on a universal policy for making energy storage decisions. As a new intermediate result, we recently published a research paper on dynamic decision-making in energy systems with storage and renewable energy sources.

Stochastic Path Detection

Stochastic path detection is a multistage decision process for protecting a network against threatening activities. Path detection problems arise naturally in a variety of areas such as humanitarian logistics, energy networks, infectious disease control and security checks in traffic networks.

The goal is to protect a given logistics network with high probability by using limited resources. In order to allocate resources as, e.g., monitoring stations, in the network, the protector must rely on assumptions about how the threatening activity is going to move in the network. The main research question is; how to cope with the risk introduced by errors in these assumptions.

Together with Professor Ricardo Collado, ERCIS partner at the Business School of the Stevens Institute of Technology in Hoboken, New Jersey, we published a research paper on risk-averse stochastic path detection.

Dynamic Service Vehicle Routing

The group has started to work on a joint research project with flaschenpost.de, a young IT-driven and very successful beverage home delivery company in Germany. The goal of the research project is to develop new approaches for real-time vehicle routing.

Service vehicles play an important role in many business models. Grocery shopping home delivery, less-than-truckload trucking and on-site maintenance services are just a few examples. In each of these examples a company running a fleet of service vehicles aims at either minimisation of operational costs or maximisation of customer satisfaction. In order to achieve these goals, the company has to make repeated decisions on the assignment of customers to vehicles and on the vehicles' routing plans. Each time a new customer calls in, both, current customer assignments and routing plans need to be revised. The main research question is; how to do plan revisions such that the decision maker's goal is achieved at the end of the day.

SELECTED PUBLICATIONS

Ball, R., Branke, J., & Meisel, S. (in print). Optimal Sampling for Simulated Annealing under Noise. *INFORMS Journal on Computing*.

Priekule, L., & Meisel, S. (in print). A Bayesian Ranking and Selection Problem with Pairwise Comparisons. In *Proceedings of the Winter Simulation Conference 2017, Las Vegas, NV*.

Collado, R., Meisel, S., & Priekule, L. (2017). Risk-Averse Stochastic Path Detection. *European Journal of Operational Research*, 260(1), 195–211.



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Meisel, S., & Powell, W. (2017). Dynamic Decision Making in Energy Systems with Storage and Renewable Energy Sources. In *Fichtner, W., Heuveline, V., & Leibfried, T. (Eds.), Advances in Energy System Optimization* (pp. 87–101). Springer.

Powell, W., Meisel, S. (2016). Tutorial on Stochastic Optimization in Energy I: Modeling and Policies. *IEEE Transactions on Power Systems*; 31(2), 1459–1467.

Powell, W., Meisel, S. (2016). Tutorial on Stochastic Optimization in Energy II: An Energy Storage Illustration. *IEEE Transactions on Power Systems*; 31(2), 1468–1475.

Meisel, S., Merfeld, T. (2016). Efficient use of Renewable Energy with Storage and E-Mobility Service. In *Proceedings of the 2nd Karlsruhe Service Summit, Karlsruhe*.



ABOUT THE INSTITUTION

Heike Trautmann is head of the Information Systems and Statistics group and a director of the ERCIS. Currently, she is also vice dean for Internationalization at the Münster School of Business and Economics. Four post-doctoral researchers and three post-graduate researchers are part of the group. The team contributes to the research areas of Data Science and Big Data, (multiobjective) Optimization, Evolutionary Computation, Algorithm Selection, and Computer Games in international collaborations. The group offers many courses in Bachelor and Master Degree programs. Industrial collaborations support the transfer from theory to applications in industry.

RESEARCH TOPICS

Some of the most challenging real-world problems involve the systematic and simultaneous optimization of multiple conflicting objective functions. **Multiobjective Optimization** deals with the simultaneous optimization of contradicting objectives. As most of the multi-objective problems cannot be solved exactly, we apply optimization techniques from **Evolutionary Computation**.

In the context of **Algorithm Benchmarking**, the group evaluates the performance of different evolutionary and nature inspired-techniques and contributes to algorithm development and enhancement. Directly

related, **Algorithm Selection** means the selection process of suitable algorithmic approaches. Methodologically, identified problem properties are matched to known algorithms' solving characteristics in order to find the best performing approaches for a given problem (Exploratory Landscape Analysis). Due to cooperation with international researchers of the **COSEAL** research group, the team is strongly involved in this area. Specifically, transportation and continuous black-box problems as well as multiobjective problems are matters of current research.

Computational Intelligence methods are also well suited to **Computer Game AI** problems because they can deal well with partial information, uncertainties, and real-time conditions. We are currently mainly dealing with three hot topics in Game AI, namely game balancing, procedural content generation, and game data analysis. Our specific focus is on providing methods that are not only cutting edge from a research perspective but also well suited for our industrial partners.

We address **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 fake news detection in online media. Special courses and project

seminars are currently offered to the students.

CURRENT RESEARCH PROJECTS

PropStop (www.propstop.de/?lang=en), funded by the BMBF), Detection, Analysis and Mitigation of Online Propaganda: The three-year project, started in June 2016, is concerned with the detection of propaganda attacks in online media. In 2017, specifically fake news detection and social bots were focused. For example, the project has documented an attempt of an orchestrated attack on Twitter during the TV debate between the German Chancellor Angela Merkel (CDU) and her contender Martin Schulz (SPD).

The **ERCIS omni-channel lab – powered by Arvato** (<https://omni-channel.ercis.org>) combines knowledge from research and experience from practice to innovate omni-channel customer relationship management.

The DAAD funded project **Instance-Based Algorithm Selection for TSP** in collaboration with the University of British Columbia, Vancouver, Canada uses machine learning techniques for automated algorithm selection.

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.

AWARDS

Heike Trautmann received the Pascal chair at the Leiden Institute of Advanced Computer Science (LIACS) of the University of Leiden for 2017.

EVENTS

In January 2017, Christian Grimme was invited to an expert hearing of the Committee on Education, Research and Technology Assessment of the German parliament.

In March 2017, Heike Trautmann organized the 9th International Conference on Multi-Criterion Optimization (EMO2017) in Münster together with Günter Rudolph, TU Dortmund, which attracted a large number of international experts of the community and was a great success.



Mike Preuss and Christian Grimme presented a workshop on social bots at the FTOJ (Frankfurt Day on Online-Journalism) on April 25, 2017.

Genetic and Evolutionary Computation Conference (GECCO), Berlin, Germany, July 2017: Pascal Kerschke and Mike Preuss, who also organized the competitions, gave an advanced tutorial on “Exploratory Landscape Analysis”.

In November 2017, the 6th International Workshop on Modeling and Management of Big Data (MoBiD'17) was held in Valencia, Spain, in conjunction with the 36th International Conference on Conceptual Modeling. The workshop was co-chaired by Heike Trautmann, Gottfried Vossen (DBIS Group, Münster) and Thomas Bäck (LIACS, Leiden).

PUBLICATIONS

Casalichio, G., Bossek, J., Lang, M., Kirchoff, D., Kerschke, P., Hofner, B., Seibold, H., Vanschoren, J., & Bischl, B. (2017). OpenML: An R package to connect to the machine learning platform OpenML. *Computational Statistics*, 2017, 1–15.

Kerschke, P., Kotthoff, L., Bossek, J., Hoos, H. H., & Trautmann, H. (2017). Leveraging TSP Solver Complementarity through Machine Learning. *Evolutionary Computation Journal*, doi: 10.1162/evco_a_00215

Bossek, J. (2017). smooF: Single- and Multi-Objective Optimization Test Functions. *The R Journal*, 2017 (1)

Grimme, C., Preuss, M., Adam, L. & Trautmann, H. (2017): Social Bots: Human-Like by Means of Human Control? *Big Data*, 2017 (accepted); CoRR, abs/1706.07624

Ahrari, A., Deb, K. & Preuss, M. (2017): Multimodal Optimization by Covariance Matrix Self-Adaptation Evolution Strategy with Repelling Subpopulations. *Evolutionary Computation* 25(3): 439–471

Carnein, M., Assenmacher, D., & Trautmann, H. (2017). An Empirical Comparison of Stream Clustering Algorithms. In *Proceedings of the ACM International Conference on Computing Frontiers (CF '17)*, Siena, Italy, 361–365.

Carnein, M., Heuchert, M., Homann, L., Trautmann, H., Vossen, G., Becker, J., & Kraume, K. (2017). Towards Efficient and Informative Omni-Channel Customer Relationship Management. In *Proceedings of the 6th International Workshop on Modeling and Management of Big Data (MoBiD '17)*, Valencia, Spain.



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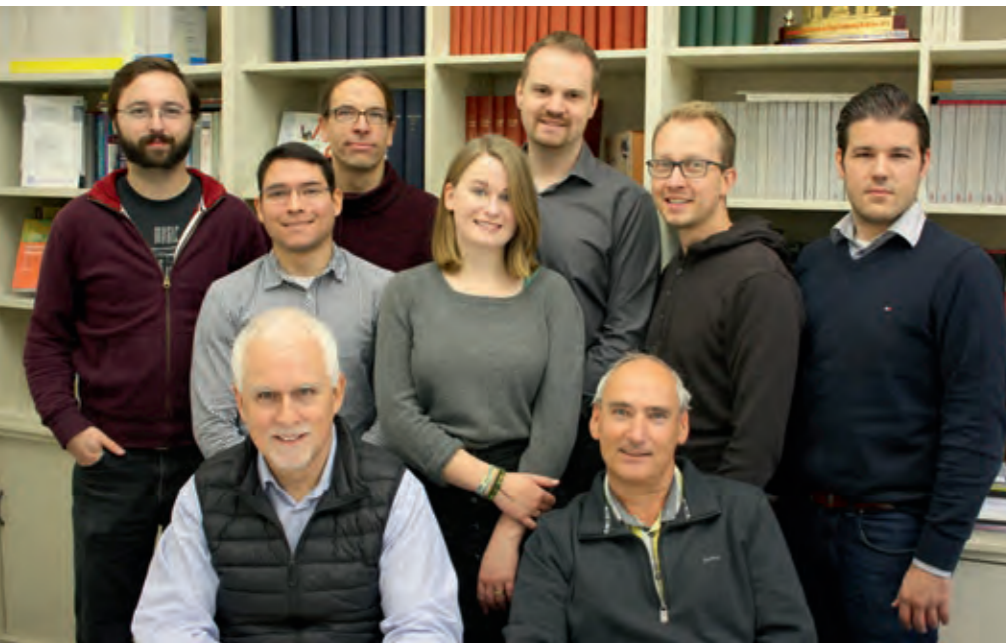
Khalifa, A., Preuss, M., & Togelius, J. (2017). Multi-objective Adaptation of a Parametrized GVGA Agent Towards Several Games. In *Proceedings of the EMO 2017, Münster*, 359–374.

Li, L., Yevseyeva, I., Basto-Fernandes, V., Trautmann, H., Jing, N., & Emmerich, M. (2017). Building and Using an Ontology of Preference-Based Multiobjective Evolutionary Algorithms. In *Proceedings of the EMO 2017, Münster*, 406–421.

DISSERTATIONS

Kerschke, Pascal: Automated Feature-Based Problem Characterization and Algorithm Selection Through Machine Learning

UNIVERSITY OF MÜNSTER – CHAIR OF COMPUTER SCIENCE – DBIS GROUP



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 databases, 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 informa-

tion 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 profiling and warehousing, (social) business process management, Big Data processing and handling, data marketplaces, data pricing, and specific modern applications involving social media. Our approach is based on the conviction that (business) processes and process models are elementary 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

ERCIS Omni-Channel Lab Powered by Arvato

In the summer term 2016 the ERCIS Omni-Channel Lab Powered by Arvato was founded in cooperation with the University

of Münster involving the chairs of Prof. Dr. Becker, Prof. Dr. Vossen, and Prof. Dr. Trautmann. Arvato as one of the world's leading providers for customer services faces the necessity to serve clients a holistic view about their customers across different communication channels, e.g. voice, mail, e-mail, chat, and social media to improve the customer interaction for the client. The challenge to implement such an omni-channel solution from the data management perspective is given by the volume, the variety, and the accessibility of the data. Therefore, the DBIS group will focus on developing a big data integration concept and an appropriate data management architecture.

Machine Learning @ Stadtwerke Münster

In cooperation with the municipal utility Stadtwerke Münster, the DBIS Group conducted two projects with a machine learning background, namely K-SCOR for customer churn analysis in energy markets and Bus 4.0 for predictions related to seat utilization in local bus lines. The newly developed K-SCOR is a predictor for the probability of contract terminations by customers based on pseudonymized customer data. Predictions make use of diverse features such as financial institution, method of payment, payment plan, and frequency of customer inquiries. Whenever these features change, the K-SCOR will be recomputed and allows, for example, tracing customers' transitions from loyal to defecting. In the project Bus 4.0 we developed a prototype to predict bus seat utilization at a chosen time and bus station beyond real-time utilization measurements. Towards this end, past passenger data are combined with current numbers obtained from so-called "people counters" and with weather forecasts. Predictions are self-maintaining in view of changing bus schedules and passenger data.

Goal-oriented Business Intelligence Architectures

Goal-oriented Business Intelligence Architectures (GOBIA) are a current research effort of the DBIS Group. GOBIA aims to fuse



University of Münster <https://www.wi.uni-muenster.de/departments/groups/dbis>

traditional Data Warehouses (DWH) and novel Big Data technologies, such as the Apache Hadoop ecosystem, on an architectural level. In previous days, mostly DWH technologies were considered for Business Intelligence (BI) architectures. With the advent of Big Data, technological possibilities grew so tremendously that it became challenging to select the "right" technology for an analytical task. Often, even a combination of technologies is needed to fulfill it. To navigate through these choices, GOBIA enhances a reference architecture (GOBIA.REF) for analytical tools with a development process (GOBIA.DEV). GOBIA.DEV focuses on the actual business goals and requirements to derive a conceptual architecture and, using this, to find suitable technologies. In the end, GOBIA should allow to employ a specific use case to narrow down the most fitting choices from a vast technology solution space and to clarify upon the needed analytical functionality and data.

EVENTS

ERCIS Launch Pad 2016

PUBLICATIONS

M. Carnein, M. Heuchert, L. Homann, H. Trautmann, G. Vossen, J. Becker, K. Kraume: Towards Efficient and Informative Omni-Channel Customer Relationship Management; Proc. 6th International Workshop on Modeling and Management of Big Data (MoBiD) 2017, Valencia, Spain

M. Carnein, L. Homann, H. Trautmann, G. Vossen, K. Kraume: Customer Service in Social Media: An Empirical Study of the Airline Industry; Workshop on Big Data Management Systems in Business and Industrial Applications (BigBIA) 2017, Stuttgart, Germany

J. Lange, F. Stahl, G. Vossen: Datenmarktplätze in verschiedenen Forschungsdisziplinen: Eine Übersicht; to appear in Informatik-Spektrum (DOI 10.1007/s00287-017-1044-3)

D. Lehmann, D. Fekete, G. Vossen: Technology Selection for Big Data and Analytical Applications; Open Journal of Big Data 3 (1) 2017, 1–25

D. Martins, F. Buarque de Lima Neto, G. Vossen: Learning Database Queries via Intelligent Semiotic Machines; to appear in Proc. 4th IEEE Latin American Conference on Computational Intelligence (LA-CCI) 2017, Arequipa, Peru

D. Martins, G. Vossen, F. Buarque de Lima Neto: Intelligent Decision Support for Data Purchase; in Proc. 2017 IEEE/WIC/ACM International Conference on Web Intelligence (WI), Leipzig, Germany

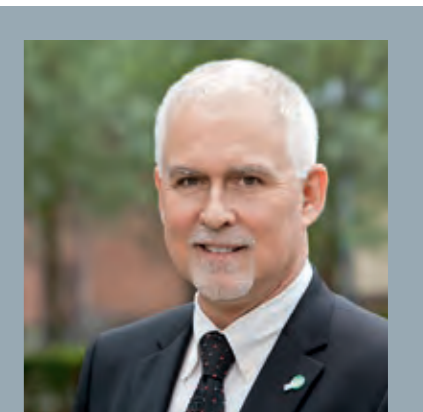
N. Pflanzl, A. Vetter, K. Hussong, A. Oberweis, G. Vossen: Horus Gamification: Ein Prototyp zum Einsatz von Gamification im Rahmen des Social BPM; in Proc. Workshop CDG – Competence Developing Games im Rahmen der GI-Jahrestagung 2017, Chemnitz, Germany

T. Quandt, G. Shegalov, H. Sjøvaag, G. Vossen (eds.): Analysis, Interpretation and Benefit of User-Generated Data: Computer Science Meets Communication Studies; Dagstuhl-Reports 6 (4) 2016, Schloss Dagstuhl – Leibniz-Zentrum für Informatik, Dagstuhl Publishing, Germany, 1–15

F. Stahl, G. Vossen: Name Your Own Price on Data Marketplaces; Informatica – An International Journal 28 (1) 2017, 1–26

H. Trautmann, G. Vossen, L. Homann, M. Carnein, K. Kraume: Challenges of Data Management and Analytics in Omni-Channel CRM; ERCIS Working Paper No. 28, 2017

G. Vossen, St. Dillon, F. Schomm, F. Stahl: A Classification Framework for Beacon Applications; Open Journal of Internet of Things (OJIOT), 3 (1) 2017, 1–11



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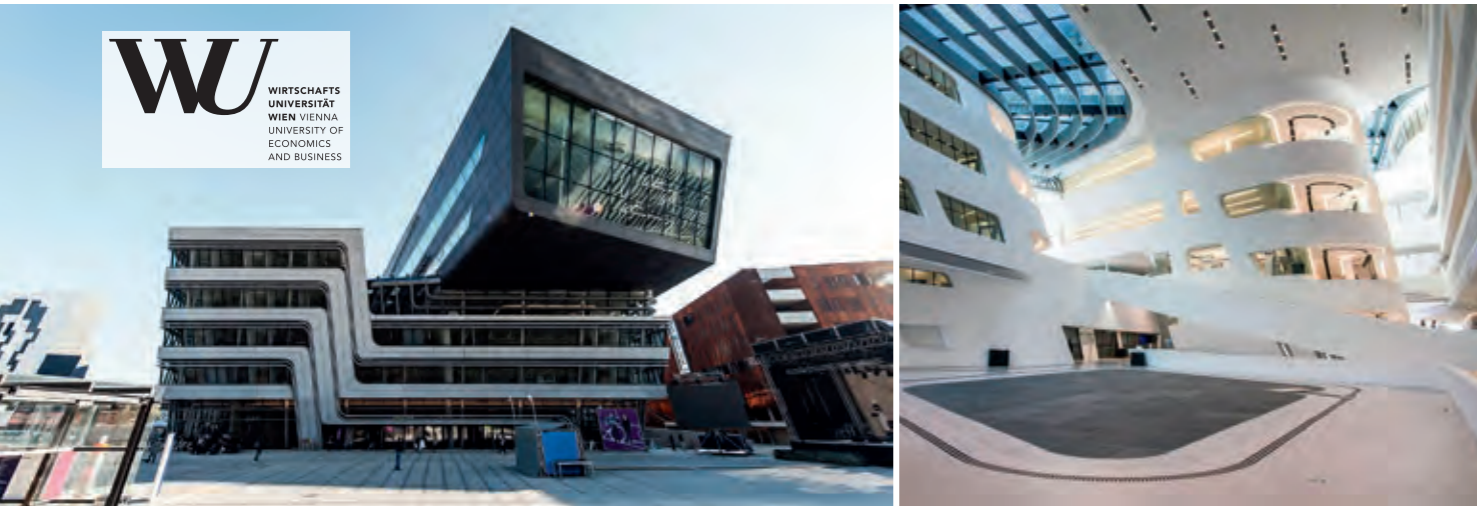
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DISSERTATIONS

Nicolas Pflanzl: Gamification for Business Process Modeling, University of Münster, Germany, 2017

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



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 program in this field (according to Format Uni-Ranking, 2009).

The established Master's Program in Information Systems (launched in winter semester 2013/14) 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 Information 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 system, 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 a 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** is focusing on research in the area of supply-chain management.

CURRENT RESEARCH PROJECTS

Axel Polleres, Sarah Spiekermann-Hoff, Sabrina Kirrane and Olha Drozd have started the SPECIAL project which will address

the contradiction between Big Data innovation and privacy-aware data protection by proposing a technical solution that makes both of these goals realistic. During the project they will develop technology that supports the acquisition of user consent at collection time and the recording of both data and metadata (consent, policies, event data, context) according to legislative and user-specified policies. The project started in January 2017 and will end in December 2019.

AWARDS

Axel Polleres won the prestigious Stanford Distinguished Visiting Austrian Chair Professorship and will be visiting Stanford January through June in 2018.

Martin Beno's bachelor thesis conducted under the supervision of Prof. Dr. Axel Polleres from the Institute for Information Business received the WU's 2017 TALENTA award for best bachelor thesis. The bachelor thesis resulted in a publication, which was nominated for the CEDEM conference's best paper award.

Bastian Wurm's master thesis with the title "Development and Application of a Measurement Scale for Business Process Standardization" was awarded with the most innovative master thesis award by the University of Liechtenstein as well as the best thesis award by the Society for Process

Management (Gesellschaft für Prozessmanagement). Bastian conducted his master thesis at the University of Liechtenstein under supervision of Theresa Schmiedel and Roope Jaakonmäki and is now a PhD candidate with the Institute for Information Business.

EVENTS

WU Vienna is organizing the ISWC International Semantic Web conference (ISWC2017) end of October 2017. ISWC 2017 is the premier international forum, for the Semantic Web / Linked Data Community. ISWC 2017 will bring together researchers, practitioners and industry specialists to discuss, advance, and shape the future of semantic technologies. For more information please visit:

<https://iswc2017.semanticweb.org/>

SPECIAL ISSUE IN DECISION SUPPORT SYSTEMS

Decision Support Systems published recently a special issue on Smart Business Process Management, covering among others RISE-BPM research. The editorial by Mendling, Baesens, Bernstein, Fellmann: Challenges of smart business process management: An introduction to the special issue. *Decision Support Systems* 100: 1-5 (2017) summarizes the contributions of the special issue. To this end, a framework is introduced that distinguishes three levels of business process management: multiprocess management, process model management, and process instance management. For each of these levels, major contributions of prior research is identified and it is described in how far papers assembled in this special issue extend our understanding of smart business process management.

SELECTED PUBLICATIONS

Gassen, J. B., Mendling, J., Bouzeghoub, A., Thom, L. H., & de Oliveira, J. P. M. (2017). An experiment on an ontology-based support approach for process modeling. *Information and Software Technology*, 83, 94–115.

Di Ciccio, C., Maggi, F. M., Montali, M., & Mendling, J. (2017). Resolving inconsistencies and redundancies in declarative process models. *Information Systems*, 64, 425–446.

Baier, T., Di Ciccio, C., Mendling, J., & Weske, M. (2017). Matching events and activities by integrating behavioral aspects and label analysis. *Software & Systems Modeling*, 1–26.

Petrusel, R., Mendling, J., & Reijers, H. A. (2017). How visual cognition influences process model comprehension. *Decision Support Systems*, 96, 1–16.

Di Ciccio, C., Maggi, F. M., Montali, M., & Mendling, J. (2017). Resolving inconsistencies and redundancies in declarative process models. *Information Systems*, 64, 425–446.

Kušen, E., Strembeck, M., Cascavilla, G., & Conti, M. (2017, July). On the influence of emotional valence shifts on the spread of information in social networks. In Proc. of the IEEE/ACM International Conference on Advances in Social Networks Analysis and Mining (ASONAM). ACM.

Hoisl, B., Sobernik, S., & Strembeck, M. (2017). Reusable and generic design decisions for developing UML-based domain-specific languages. *Information and Software Technology*, 92, 49–74.

Figl, K. (2017). Comprehension of procedural visual business process models. *Business & Information Systems Engineering*, 59(1), 41–67.

Figl, K., & Recker, J. (2016). Process innovation as creative problem solving: An experimental study of textual descriptions and diagrams. *Information & Management*, 53(6), 767–786.

Figl, K., & Recker, J. (2016). Exploring cognitive style and task-specific preferences for process representations. *Requirements Engineering*, 21(1), 63–85.



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Meroni, C., Di Ciccio, C., & Mendling, J. (2017). An Artifact-driven Approach to Monitor Business Processes Through Real-world Objects. *ICSOC* [to appear]

Beno, M., Figl, K., Polleres, A., & Umbrich, J. (2017). Open data hopes and fears: Determining the barriers of open data. In 2017 Conference for E-Democracy and Open Government. CeDEM.

Neumaier, S., Polleres, A., Steyskal, S., & Umbrich, J. (2017, July). Data Integration for Open Data on the Web. In Reasoning Web International Summer School (pp. 1–28). Springer, Cham.



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 **51,771 students** as of October 2016. The largest student populations are found in the faculties of Economics and Business, Medicine, Engineering Technology, Arts, and Law. Students from approximately 150 countries study at KU Leuven.



De Hallen at the Naamsestraat can be considered as the headquarter of KU Leuven. It was originally used by weavers for selling cloth. Shortly after the establishment of the university (in 1425), the city put part of the building at the disposal of the colleges as a classroom. The building currently serves as the university's administration centre. It is still the central place of student enrolment, and one of its halls is still regularly used for public PhD defences.

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 in-

formation systems throughout society. The LIRIS Faculty currently counts 7 professors, 1 postdoc and around 15 PhD researchers.

PUBLIC GOVERNANCE INSTITUTE

The KU Leuven Public Governance Institute has as 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 focusses on different aspects of public governance. Both fundamental and applied research are part of our activities, with special attention on 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), modeling 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, 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, modeling and architecture of information systems;
- knowledge discovery, data and process mining;
- architecture and infrastructure;
- data, process and decision modeling;
- 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 modeling, data quality and requirements management is a first important area. It allows creating innovative solutions, based on sound modeling principles and aligned with the business. Example: - 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 the area of 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 (modeling, 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.

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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 modeling 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.



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

Recent research projects of Public Governance Institute are:

- A digital Flemish government (Flemish government)(2016–2018).

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

- Geospatial technology innovations for land tenure security in East Africa (H2020) (2016–2017).

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

- Strengthening institutional capacity to Support Public Administration and/or Development Management Programmes at Ambo University (2013–2018).

- UN-GGIM WG-NIA: United Nations Global Geospatial Information Management, Development of a framework and guidelines in support of national institutional arrangements in geospatial information management for Member States, United Nations Statistics Division (2017).

- SLICE3D – Slovenian Centre of Excellence on 3D geodata, Slovenia, University of Ljubljana, EU Horizon 2020 Teaming Instrument

- LOCREF: Local Public Sector Reforms: An International Comparison (COST)(2013–2017).

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:

Colruyt-Symeta Research Chair: Smart Data and Decisions in Marketing.

KBC Research Chair: A Data Quality Framework for Effective Risk Data Aggregation and Risk Reporting.

Coca Cola Research Chair on Gaining Business Value out of Big Data and Predictive Analytics.

Bpost Bank Research Chair on ACT: Actionable Customer Analytics.

VDAB Research Chair on CARMA: CAReer Management Analytics.

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

PIONEER

Under the EU Erasmus+ flag, KU Leuven, the University of Münster and Tallinn University of Technology have launched a new Erasmus Mundus Master of Science in Public Sector Innovation and eGovernance this year. This new 2-year master programme is unique in its kind, because of its international profile and interdisciplinary nature, where students will receive a solid background in the field of public administration (Leuven), information systems (Münster) and digital government (Tallinn).

JOURNAL PUBLICATIONS

An empirical comparison of techniques for the class imbalance problem in churn pre-

diction, *Zhu B, Baesens B, vanden Broucke S, 2017, Information Sciences, vol. 408*

Fodina: a robust and flexible heuristic process discovery technique, *vanden Broucke S, De Weerd J, 2017, Decision Support Systems, vol. 100*

Change visualisation: analysing the resource and timing differences between two event logs, *Low W, van der Aalst W, ter Hofstede A, Wynn M, De Weerd J, 2017, Information Systems, vol. 65*

Defining analytics maturity indicators: a survey approach, *Lismont J, Vanthienen J, Baesens B, Lemahieu W, 2017, International Journal of Information Management, vol. 37*

Benchmarking sampling techniques for imbalance learning in churn prediction, *Zhu B, Baesens B, Backiel A, vanden Broucke S, 2017, Journal of the Operational Research Society, vol. –*

Is your company ready for HR analytics?, *Baesens B, De Winne S, Sels L, 2017, MIT Sloan Management Review, vol. 58*

Evaluating business process maturity models, *Van Looy A, Poels G, Snoeck M, 2017, Journal of the Association for Information Systems, vol. 18*

Explaining clusterings of process instances, *De Koninck P, De Weerd J, vanden Broucke S, 2017, Data Mining and Knowledge Discovery, vol. 31*

Time to default in credit scoring using survival analysis: a benchmark study, *Dirick L, Claeskens G, Baesens B, 2017, Journal of the Operational Research Society, vol. 68*

Assessing the influence of feedback-inclusive rapid prototyping on understanding the semantics of parallel UML statecharts by novice modelers, *Sedrakyan G, Poelmans S, Snoeck M, 2017, Information and Software Technology, vol. 82*

GOTCHA! Network-based fraud detection for social security fraud, *Van Vlasselaer V, Eliassi-Rad T, Akoglu L, Snoeck M, Baesens B, 2017, Management Science, vol. 63*

Testing of model-driven development applications, *Marín B, Gallardo C, Quiroga D, Giachetti G, Serral Asensio E, 2017, Software Quality Journal, vol. 25*

The governance landscape of geospatial e-services – The Belgian case. *Chantillon, M, Crompvoets, J. and Peristeras, V., 2017, International Journal Geo-Information – Innovative Geo-Information Tools for Governance.*

A Marine Spatial Data Infrastructure in New Zealand: A systematic Review on the Costs – Benefits. *Griffin, E., Crompvoets, J. and Coote, A., 2017, Journal of Spatial Science.*

Evolving Spatial Data Infrastructures and the Role of Adaptive Governance. *Sjoukema, J.-W., Bregt, A., and Crompvoets, J., 2017, International Journal Geo-Information – Innovative Geo-Information Tools for Governance, 6(8), 254.*

Qualitative monitoring of information infrastructures: A case study of INSPIRE. *Masser, I. and Crompvoets, J., 2016, Environment and Planning B: Planning and Design, November 2016, 1–15.*

When Innovation Stumbles: Applying Sauer’s Failure Model to the Flemish Road Signs Database Project. *Van Cauter, L., Bannister, F., Crompvoets, J., and Snoeck, M., 2016, International Journal of Public Administration in the Digital Age, 3(1): 1–18.*

BOOKS

Vanthienen, J., De Witte, K. (2017). Data analytics applications in education, Taylor and Francis.

Verbeke, W., Bravo, C., Baesens, B., (2017). Profit driven business analytics – a practitioner’s guide to transforming big data into added value, Wiley.

Coleman, D., Rajabifard, A., Crompvoets, J. (2016). Spatial Enablement in a Smart World. GSDI Association Press, Gilbertville, USA, 270 pgs.

BOOK CHAPTER PUBLICATIONS

Improved student feedback with process and data analytics, *De Smedt J, vanden Broucke S, Vanthienen J, De Witte K, 2017, Data analytics applications in education, Taylor and Francis.*

Cognitive feedback and behavioral feedback automation perspectives for modeling and validation in a learning context, *Sedrakyan G, Snoeck M, 2017, Communications in Computer and Information Science, vol. 692.*



Kruse, J., Crompvoets, J., and Pearlman, F., 2017. GeoValue – The Socioeconomic Value of Geospatial Information. CRC Press,

Quantifying the social and economic value that geospatial information contributes to modern society is a complex task. To construct reliable and consistent valuation measures requires an understanding of the sequence of processes that starts with data acquisition, and leads to decision-makers’ choices that impact society. This book explores each step in this complex value chain from the viewpoint of domain experts spanning disciplines that range from the technical side of data acquisition and management to the social sciences that provide the framework to assess the benefit to society. The book is intended to provide foundational understanding of the techniques and complexities of each step in the process.

DISSERTATIONS

LIRIS: 24-01-2017, *Libo Li*, “Essays on relational and time to event analysis.”

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06-12-2016, *Johannes De Smedt*, “Studies on declarative process modeling and its relation to procedural techniques.”

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



ABOUT THE INSTITUTION

The Natural Sciences have been 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 September, 1st 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 also 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 is focused on research and teaching in the areas of database systems, semantic web, similarity search, XML technologies, parallel computing, Big Data, and e-Science.



RESEARCH TOPICS

There are three research groups in the department:

SiRet (Similarity RETrieval) Research Group (SRG) <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 nonmetric spaces), biological applications of the similarity search, and indexing image databas-

es 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, 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. The Big data and Linked data research is currently 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 are the following: User Preference Analytics in Multimedia Exploration Models, Efficient subgraph discovery for petabyte-scale web analysis, Novel methods for computational prediction and visualization of secondary structures of ribosomal ribonucleic acids – an integrated solution, Adaptive virtual screening, Using metric indexes for efficient content-based multimedia exploration, Efficient Exploration of Linked Data Cloud.

PUBLICATIONS

R. Bača, M. Krátký, I. Holubová, M. Nečaský, T. Skopal, M. Svoboda, S. Sakr. Structural XML Query Processing, ACM Computing Surveys, 50(5), pp.: 64:42, ACM, ISSN: 0360-0300, 2017

C. Cobarzan, K. Schoeffmann, W. Bailer, W. Hurst, A. Blažek, J. Lokoč, S. Vrochidis, K. U. Barthel, L. Rossetto. Interactive Video Search Tools: A Detailed Analysis of the Video Browser Showdown 2015, Multimedia tools and applications, 76(4), pp.: 5539–5571, Springer, ISSN: 1380-7501, 2017

J. Lu, I. Holubová: Multi-model Data Management: What's New and What's Next? EDBT 2017: 602-605.

N. Meuschke, M. Schubotz, F. Hamborg, T. Skopal, B. Gipp. Analyzing Mathematical Content to Detect Academic Plagiarism, CIKM, Singapore, pp. 1-4, ACM, 2017

D. Bednárek, M. Brabec, M. Kruliš: Improving matrix-based dynamic programming on massively parallel accelerators. Information Systems, 64: 175-193, 2017

M. Krulis, H. Osipyan, S. Marchand-Maillet: Employing GPU architectures for permutation-based indexing. Multimedia Tools Appl. 76(9): 11859-11887, 2017

J. Mísek, F. Zavoral: Control Flow Ambiguous-Type Inter-Procedural Semantic Analysis for Dynamic Language Compilation. ANT/SEIT 2017: 955-962

J. Pokorný, M. Valenta, J. Kovačič: Integrity constraints in graph databases. In: Proc. of the 8th International Conference on Ambient Systems, Networks and Technologies (ANT 2017), 7th Int. Symp. on Frontiers in Ambient and Mobile Systems (FAMS 2017), Elsevier Science, Procedia Computer Science, 2017, pp. 975-981

L. Maršík, M. Rusek, K. Slaninová, J. Martinovič, J. Pokorný: Evaluation of Chord and Chroma Features and Dynamic Time Warping Scores on Cover Song Identification Task. In: Proc. of CISIM 2017 – 16th IFIP TC8 International Conference, Springer, pp. 205-217

Pokorný, J.: Functional Querying in Graph Databases. In: Proc. of 9th Asian Conference on Intelligent Information and Database Systems (ACIIDS 2017) Nguyen N., Tojo S., Nguyen L., Trawiński B. (eds). Springer, Part I, LNCS, 2017, pp. 291-301

DISSERTATIONS

Marek Polák, Evolution and Adaptability of Complex Applications, 2017



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EVENTS

ACM Hypertext 2017: The 28th ACM Conference on Hypertext and Social Media, Prague, Czech Republic, July 4–7, 2017

DATESO 2017: 17th Annual International Workshop on Databases, Texts, Specifications, and Objects April 10–12, Fara Rančičov, Jihlava, 2017

Mobile Web and Intelligent Information Systems: 14th International Conference, MobiWIS 2017, Prague, Czech Republic, August 21–23, 2017



**Copenhagen
Business School**
HANDELSSHJSKOLEN



ABOUT THE INSTITUTION

The **Department of Information Technology Management (ITM)** is one of the largest ITM departments in Europe. ITM 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 inter-relationships 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, ITM 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 ITM 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 ITM is organized around a number of cross disciplinary themes and we cover a number of research areas like 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. They 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.

CURRENT RESEARCH PROJECTS

BPM-Online. In this EU project, CBS participates in the development of an EU reference curriculum for business process management. CBS's focus is on the challenges and the role of BPM with regards to organizational flexibility, innovation and employee's expertise.

Center for Business Data Analytics. The Center for Business Data Analytics(cbsBDA) has started at the Department of Information Technology Management 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 ITM 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. This will 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 its use and experience? 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 The Danish Bankers Association, NETS, Dansk Bank, Cell Point Mobile, IBM and Innovation Lab.

PUBLICATIONS

Stefan Henningsson; William J. Kettinger / Understanding Information Systems Integration Deficiencies in Mergers and Acquisitions : A Configurational Perspective. In: Journal of Management Information Systems, Vol. 33, No. 4, 2017, p. 942–977.

Mads Bødker / What Else Is There...? : Reporting Meditations in Experiential Computing. In: European Journal of Information Systems, Vol. 26, No. 3, 2017, p. 274–286

Michel Avital; Lars Mathiassen; Ulrike Schultze / Alternative Genres in Information Systems Research. In: European Journal of Information Systems, Vol. 26, No. 3, 2017, p. 240–247.

Adrian Yeow; Christina Soh; Rina Hansen / Aligning with new Digital Strategy : A Dynamic Capabilities Approach. In: Journal of Strategic Information Systems, 28.9.2017

Thomas Jensen; Ravi Vatrupu; Niels Bjørn-Andersen / Avocados Crossing Borders : The Problem of Runaway Objects and the Solution of a Shipping Information Pipeline for Improving International Trade. In: Information Systems Journal, in Press, online 14.8.2017.

Michael Wessel; Ferdinand Thies; Alexander Benlian / Opening the Floodgates : The Implications of Increasing Platform Openness in Crowdfunding. In: Journal of Information Technology, 8.5.2017

Ben Eaton; Jonas Hedman; Rony Medaglia / Three Different Ways to Skin a Cat : Financialization in the Emergence of National e-ID Solutions. In: Journal of Information Technology, in Press, online 24.4.2017

Carmen Leong; Barney Tan; Xiao Xiao; Felix Ter Chian Tan; Yuan Sun / Nurturing a Fin-Tech Ecosystem : The Case of a Youth Microloan Startup in China. In: International Journal of Information Management, Vol. 37, No. 2, 2017, p. 92–97

Jonas Hedman; Stefan Henningsson / Developing Ecological Sustainability : A Green IS Response Model. In: Information Systems Journal, Vol. 26, No. 3, 2016, p. 259–287.

Robert D. Austin; David Upton / Leading in the Age of Super-Transparency. In: M I T Sloan Management Review, Vol. 57, No. 2, 2016, p. 25–32.



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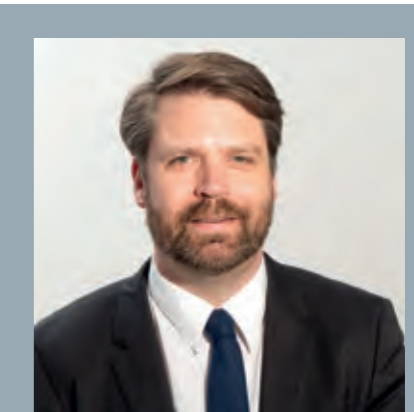
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Roya Gholami; Richard T. Watson; Helen Hasan; Alemayehu Molla; Niels Bjørn-Andersen / Information Systems Solutions for Environmental Sustainability : How Can We Do More? In: Journal of the Association of Information Systems (JAIS), Vol. 17, No. 8, 2016, p. 521–536.

Chee-Wee Tan; Izak Benbasat; Ronald Centefelli / An Exploratory Study of the Formation and Impact of Electronic Service Failures. In: M I S Quarterly, Vol. 40, No. 1, 2016, p. 1–29.

Jonas Hedman; Saonee Sarker; Daniel Veit / Digitization in Business Models and Entrepreneurship. In: Information Systems Journal, Vol. 26, No. 5, 2016, p. 419–420.



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DISSERTATIONS

Noella Edelmann (2017): Online Lurking: Definitions, Implications, and Effects on E-participation.



ABOUT THE INSTITUTION

The Ragnar Nurkse Department of Innovation and Governance (RND) under 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 PhD, having over 500 students.

RND is part of Tallinn University of Technology (TUT), which is a public university that was established in 1918 and ranked in top 3% of the global universities.¹ It is the only university focusing on engineering and technology in Estonia. Furthermore, it is going to become one of the leading technological universities in the Baltic Sea region. The University's approximately 70,000 alumni have shaped the economic landscape of the present-day Estonia. TUT offers its students exciting student and cultural life and the best accommodation and sporting opportunities in the Baltic Sea region. The TUT campus is also a home to more than 200 high-tech companies (e.g. Skype). TUT has four Schools: School of Business and Governance, School of En-

gineering, School of Information Technologies and School of Science, plus Estonian Maritime Academy, making up 20 departments.

RESEARCH TOPICS

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

- e-Governance and e-Government
- Technology Governance
- Innovation Policy
- Public Sector Innovation
- Managing Innovation in Government
- Digital Transformation of Government
- Public Administration, Management and Policy

CURRENT RESEARCH PROJECTS

RND coordinates one of the largest public sector innovation pilots of the Horizon2020 Programme: **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; 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. TUT's Department of Software Science leads the task of IT architecture development.

RND is one of twelve partners in the Horizon2020 project **OpenGovIntelligence**, acronym OGI. The Project with the full name “Fostering Innovation and Creativity in Europe through Public Administration Modernization towards Supplying and Exploiting Linked Open Statistical Data” started in February 2016 and ends in January 2019 (36 months). OGI has a total budget of 2.8 Million Euros from which 227,500 are allocated to RND. The OpenGovIntelligence project aims at stimulating sustainable

economic growth in Europe through fostering innovation in society and enterprises. Towards this end, OGI suggests a holistic approach for the modernization of public administration by exploiting linked open statistical data technologies. This includes new business processes, policies and tools that will enable the active participation of the society and enterprises in data sharing and in the co-production of innovative data-driven public services.

Professor Robert Krimmer leads the Estonian Research Council Personal Research Funding project “**Internet Voting as Additional Channel for Legally Binding Elections: Challenges to Voting Processes Re-engineering.**” The project's duration is 48 months– 1 January 2017 until 31 December 2020– and has a budget of 50,000 Euros. With the 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. However, research into the governance thereof remains limited. 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 internet voting and other channels affects the overall costs thereof.

PUBLICATIONS

Krimmer, R., Volkamer, M., Braun Binder, N., Kersting, N., Pereira, O., Schürmann, C. (Eds.) (2017). Electronic Voting: Second International Joint Conference, E-Vote-ID 2017, Bregenz, Austria, October 24–27, 2017, Proceedings. Springer International Publishing.

McBride, K., Aavik, G., Kalvet, T., Krimmer, R. (2017). Co-creating an Open Government Data Driven Public Service: The Case of Chicago's Food Inspection Forecasting Model. Working Papers in Technology Governance and Economic Dynamics, 76, 1–25.

Toots, M., McBride, K., Kalvet, T., Krimmer, R. (2017). A Framework for Data-Driven Public Service Co-Production. IFIP EGOVEPART 2017 conference proceedings: IFIP EGOVEPART2017 conference, St. Petersburg, Russia, September 2017. Springer LNCS.

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Edelmann, N., Krimmer, R., Parycek, P. (2017). How online lurking contributes value to E-participation: A conceptual approach to evaluating the role of lurkers in e-participation. 2017 Fourth International Conference on eDemocracy & eGovernment (ICEDEG). IEEE, 86–93.

¹ Source: QS and T.H.E. TUT holds approximately the 650th position among over 22,000 assessed universities.



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

› University of Turku – Turku School of Economics – Institute of Information Systems Science www.utu.fi



ABOUT THE INSTITUTION

The roots of the Institute for Information Systems Science were established in the year 1971. Nowadays the Institute is 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 System Science completes the sphere of Information Sciences at the University of Turku adding to the more technical/natural science -oriented work at the department of Information Technology. Research widely covers the topic spectrum of Information Systems Science, with a gravity point in information and network management in 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 openings contain issues such as preparing for the health social services renewal in Finland, information system continuity management, management of waste flows, ethical issues within IT, digital divide, networks and business models and hospitality management.

EVENTS

In 2017 the University of Turku continued hosting the Kilpisjärvi Information Systems Seminar, one of the oldest continuing IS seminars established in 1990.

PUBLICATIONS

Islam, A., Mäntymäki, M., & Bhattacharjee, A. (2017). Towards a Decomposed Expectation Confirmation Model of IT Continuance: The Role of Usability. *Communications of the Association for Information Systems*, 40(1), 23.

Liu, Y., Teichert, T., Rossi, M., Li, H., & Hu, F. (2017). Big data for big insights: Investigating language-specific drivers of hotel satisfaction with 412,784 user-generated reviews. *Tourism Management*, 59, 554–563.

Liu, Y., Mezei, J., Kostakos, V., & Li, H. (2017). Applying configurational analysis to IS behavioural research: a methodological alternative for modelling combinatorial complexities. *Information Systems Journal*, 27(1), 59–89.

Gan, C., & Li, H. (2017). Understanding the effects of gratifications on the continuance intention to use WeChat in China: A perspective on uses and gratifications. *Computers in Human Behavior*.

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Bouwman, H., Heikkilä, J., Heikkilä, M., Leopold, C., & Haaker, T. (2017). Achieving agility using business model stress testing. *Electronic Markets*, 1–14.

Dahlberg, T., Hokkanen, P., & Newman, M. (2017). Socio-Technical Punctuated Equilibrium Model Enhanced with Social Network Theory: As the Descriptor of Changes in the Equilibria of CIO Work. *International Journal of IT/Business Alignment and Governance (IJITBAG)*, 8(1), 1–16.

Wang, P., Zhang, X., Suomi, R., & Sun, C. (2017). Determinants of Customers' eWOM Behaviour – A System Success Perspective. *Information and Communication Technologies in Tourism 2017* (pp. 401–415): Springer.

Suomi, R., Serkkola, A., & Korhonen, P. (2017). Monitoring indicators for source segregation in municipal solid waste management. *International Journal of Environment and Waste Management*, 19(2), 164–180.

DISSERTATIONS

Marko Niemimaa. Performing Continuity of in Smart Infrastructure: Exploring Entanglements of Infrastructure and Actions. Doctoral dissertation.

INSTITUTION AT A GLANCE

The University of Turku is a multidisciplinary scientific university located 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 the research methods used, the institute has a track-record and long traditions of conducting action research dating back to the 1980s. Today, the competence



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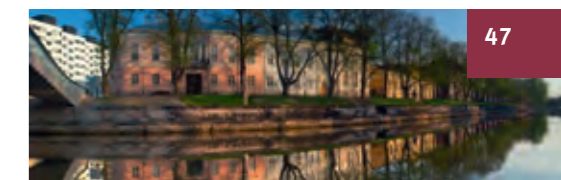
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of the faculty members covers the whole methodological spectrum from qualitative to quantitative research.

Despite being in a business school, the institute also has run a rich research tradition on 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.



KEDGE BUSINESS SCHOOL – DEPARTMENT OF OPERATIONS MANAGEMENT AND INFORMATION SYSTEMS

› KEDGE Business School – Department of Operations Management and Information Systems www.kedgebs.com



KEDGE
BUSINESS SCHOOL



ABOUT THE INSTITUTION

KEDGE Business School offers a large portfolio of degree programs ranging from bachelor's and master's degrees to MBAs and Executive Education. Research performed by its faculty is highly regarded, and covers such areas as global responsibility, supply chain management, wine and spirits management, arts & culture management and innovation in SME. International students can also take a semester abroad in one of its 280 partner universities.

KEDGE Business School holds three accreditations – from EQUIS, AACSB and AMBA – and has been ranked by the Financial Times since 2008. KEDGE Business School is committed to excellence, social responsibility and diversity. Therefore, it has decided to offer financial support to talented international students.

The “Operations Management and Information Systems” department is valued for its competency in purchasing, logistics, supply chain and information systems management. The team members are highly recognized for expertise in the area of Information and Decision Science, in Knowledge Management, Serious games, e-business, and Organizational Learning research fields.

RESEARCH TOPICS

The areas of research pursued by the team members are wide-ranging: developing business models of electronic marketplaces and measurement of electronic service quality, a systemic analysis of organizational design and the performance of inventory control systems, formal modelling for the different organizational learning mechanisms and causal mapping applications in managerial decision-making.

CURRENT RESEARCH PROJECTS

HRM Practices and Intellectual Capital Architecture: Fostering Ambidexterity in MNCs

The study of a French MNC, which simultaneously uses structural and contextual approaches to ambidexterity is in the focus of a transdisciplinary project developed by Olivier Dupouet, Tatiana Bouzdine-Chameeva together with professor C. Lakshman from Tongji University School of Economics and Management in Shanghai, China. The research provides an empirical understanding of practices at a large French MNC with global (180 countries) operations encompassing both structural and contextual ambidexterity. This revelatory case design provides an in-depth investigation of a French MNC. If organizational ambidexterity has been well researched during the last decade, yet, the human resource perspective on this is non-existent, and

this project contributed to that new area of research. Findings suggest that an intellectual capital configuration, with relatively high levels of human, social, and organizational capital respectively is essential for fostering ambidexterity. Additionally, both a human-capital enhancing HR system and an administrative HR system aids ambidexterity. The intellectual capital architecture is also discussed.

Journal, *Global Business and Organizational Excellence*



Global Business and Organizational Excellence is published six times a year by Wiley in collaboration with KEDGE Business School. GBOE publishes original applied research and case studies that provide practical guidance on operational issues for global organizations. Articles should stress the practical/applied value of the work rather than the contribution it makes to theory. In general, the theoretical content of the article should be used to provide context for the subject rather than being the principal focus of the article. Articles should not exceed 7,500 words.

<http://onlinelibrary.wiley.com/doi/10.1002/joe.v33.2/issuetoc>

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Articles should be submitted directly to Chris Kimble:

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EVENTS

Topics:

- Information and Decision Systems for Supply Chain Management
- Collaboration and Sharing Practices in the Supply Chain
- Supply Chain Management under Risk and Uncertainty
- Innovative and Smart Technologies for Interconnected Era in Logistics
- Smart and Durable City Logistics

PUBLICATIONS

Bourdon, I., Kimble, C., & Buffenoir, E. (2017). Eau Méditerranée's Panopticon: Democratic Oversight for Deregulated Public Services. Global Business and Organizational Excellence, 36(2), 25–33. 9.

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Lakshman, C., Dupouet, O., & Bouzdine-Chameeva, T. (2017). HRM Practices and Intellectual Capital Architecture: Fostering Ambidexterity in MNCs. Management international. (In press)

Petcu, R., Kimble, C., Ologeanu-Taddei, R., Bourdon, I., & Giraudeau, N. (2017). Assessing Patient's Perception of Oral Teleconsultation. International Journal of Technology Assessment in Health Care, 33(2), 147–154.

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Podinovski, V. V., & Bouzdine-Chameeva, T. (2017). Solving DEA models in a single optimization stage: Can the non-Archimedean infinitesimal be replaced by a small finite epsilon? European Journal of Operational Research, 257(2), 412–41.

Vasconcelos, J. B., Kimble, C., Carreiro, P., & Rocha, Á. (2017). The Application of knowledge management to software evolution. International Journal of Information Management, 37(1), 1499–1506.

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

› National University of Ireland Galway – Lero Research Centre and Business Information System <https://www.lero.ie/>



ABOUT THE INSTITUTION

NUI Galway was founded in 1845. NUI Galway 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, and we are recognised as being one of the best universities for our international outlook. Our spectacular location boasts the unique landscape and culture of the west of Ireland. Our global network connects us to partners around the world. Our researchers are shaping the future. Our students are shaping their own.

NUI Galway offers a wide range of undergraduate and postgraduate courses, and a wide range of part-time diplomas and degrees, as well as flexible learning, professional qualifications and online learning options. NUI Galway has five Colleges: the college of Arts, Social Sciences & Celtic Studies, the college of Engineering & Informatics, the college of Medicine, Nursing, & Health Sciences, the college of Business, Public Policy, & Law, and the college of Science.

The Lero research group 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 Insti-

tutes of Technology in a coordinated centre of research excellence with a strong industry focus. Lero has raised the level and profile of Irish software research with such effect that it is now one of the best known and highly regarded software-related research centres in the world.

Lero NUI Galway works 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 mission of the research group is to deliver world-class, high-impact research through industry collaboration. The research group at NUI Galway is comprised of sixteen staff including academic, postdoctoral and Ph.D. researchers from diverse industry backgrounds and is part of a global network of industry domain experts and thought leaders.

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

RESEARCH TOPICS

Our research concentrates on a number of key areas; agility, open innovation, project portfolio management.

Agility: The growing popularity of Agile and Lean methods such as Scrum, eXtreme Programming, TDD and Kanban indicate a strong desire to improve how we work and how we create value for our customers. While there are many potential benefits to Agile and Lean adoption there is no recipe to follow that will guarantee success. We examine agile methods within industry settings. We study the key challenges in agile and further contribute to the concept and customisation of agile methods.

Temporality: While time is often a critical measure of technology, it is often oversimplified in research and the evaluation of technology. Instead, time is an inherently complex, multi-faceted, subtle and complex. While IS researchers are quick to highlight the impact of ICTs on the speed of organizational and social life, they can be slow to address the complexities of time. Our research in this area includes the evaluation of the true 'velocity' and speed afforded by methods such as agile and flow. We also examine the extent to which the speed of analytics provides true business value to organisations using these technologies.



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

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 as was originally intended, with non-standard implementations now widespread i.e. large teams, start-ups, distributed development environments, greenfield sites, educational environments, open source development, outsourcing, and systems maintenance. This presents new and different challenges for the scaling of agile and 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

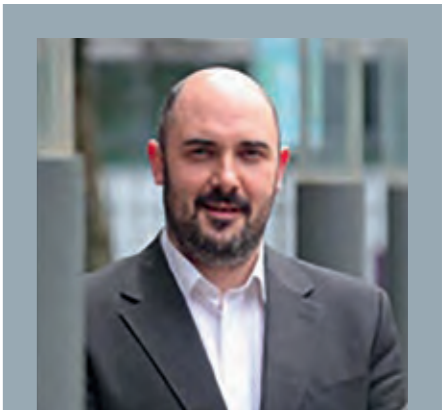
tangible research outcomes that are immediately applicable to organisation settings. The team works with multinationals such as Dell, AIB, Accenture, and Markit | Information Mosaic to deliver solutions to software agility issues.

Currently the team looks at areas such as; (i) information networks, 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 emphasises on viewing ISD as evolving activity systems (teams, organisations) beyond a single user, (iv) software product innovation, open innovation, software startup, Lean startup, inner source, (v) agile information systems project portfolio management through the lens of complex adaptive systems theory, (vi) temporality within the context of ISD.

PUBLICATIONS

Schlagwein, D.; Conboy, K.; Feller, J.; Morgan, L. (2017) 'Openness' With and Without IT: A Framework and a Brief History. Journal of Information Technology, forthcoming.

Cullina, E., Conboy, K. and Morgan, L., 2017. Driving Entrepreneurship Through Crowdsourcing in Scientific Research Funding Agencies. Collective Intelligence, New York, 14–15 June 2017.



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Dennehy, D. and Conboy, K., 2017. Going with the flow: An activity theory analysis of flow techniques in software development. Journal of Systems and Software, 133, pp.160–173.

Carroll, N. and Richardson, I., 2017. Mapping a Careflow Network to Assess the Connectedness of Connected Health. Health Informatics Journal, p.1460458217702943.

O Connor, M., Conboy, K. and Dennehy, D., 2017, December. Examining the concept of Information Systems Development Flow. In International Conference on Information Systems (ICIS) 2017: Transforming Society with Digital Innovation., Seoul, South Korea, 10–13 December 2017.



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

 **LUISS BUSINESS SCHOOL**



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. The affiliation with Confindustria offers unique research opportunities for LUISS researchers and business practitioners as well as provides LUISS students with solid career opportunities. Located in the hearth of Rome, the eternal city, LUISS holds partnering relationships for training as well as research purposes with universities around the globe. LUISS is composed of four Departments and four Schools covering the areas of Economics and Finance, Management, Law, and Political Science. The Business School and the Department of Business and Management are EQUIS accredited for all programmes delivered, from the BA to the PhD.

LUISS faculty is actively engaged in both theoretical and applied research in a variety of areas of business and management including information systems (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 and has been awarded in 2016 as an outstanding chapter of the AIS. Teaching and research activities in the IS field at LUISS are conducted in conjunction with the Organization and Innovation group, whose members have published in international top journals including JIT, JSIS, I&M, CAIS, JKM, AMJ and Management Decision.

In 2017 LUISS has hosted scholars from more than 150 partner universities. Among them, the following guests have ongoing collaborations with the LUISS IS group: Richard Baskerville from Georgia State University, John Baptista and Panos Constantinides from the Univ. of Warwick, Gerardo Patriotta, Bendik Bygstad and Ole Hanseth from the Univ. of Oslo, Øystein Sæbø from the Univ. of Agder, Colette Depeyre from Paris Dauphine and Robert Winter from the Univ. of St. Gallen. In 2017, members of the LUISS IS group have joined as visiting scholars the University of Agder (NO), the University of Oslo (NO), Paris Dauphine (FR) and the University of Warwick (UK).

RESEARCH TOPICS

Research on IS at LUISS is done in conjunction with project activities in which members of the IS group participate in the it-

erative phases of designing and evaluating sociotechnical interventions. A multidisciplinary 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 three subject areas. The first is related to architecture and governance of digital products and platforms. The second is related to digital transformation in private and public sectors. The third refers to IT governance and Cybersecurity. Among the more recent application domains are e-government, digital entertainment, e-Health and social services, crowdfunding and cybercrime.

CURRENT RESEARCH PROJECTS

The Erasmus+ project MASTIS (Establishing Modern Master-level Studies in Information Systems) project started in February 2016. The EU-funded project aims at investigating and discussing the curriculum in the Information Systems area and the way of teaching practiced in 17 Universities out of 10 different European countries. The main

objective of MASTIS is to align and possibly update programs and teaching methods in most Universities of Ukraine and Montenegro, but as a secondary outcome, it supports a fruitful exchange of experiences on methods, tools, and arguments among ERCIS members and Universities of eastern European countries. The CLIO team is providing feedback and advice on how coding, design thinking and gamification are applied as teaching practices in the area of digital innovation.

Additional IS projects led by CLIO members are related to platform dynamics in deep web anonymous markets, social media engagement for business, government and charity organizations and digital workplace transformation. In September 2017, a COST action led by the University of Oslo, named “European Network for eHealth Infrastructures for Patient-centred Care”, has been resubmitted for funding.

PUBLICATIONS

Braccini, A.M., Federici, T. & Sæbø, Ø. (2017) Tensions in Online Communities: The Case of a Mass Size eParticipation Initiative. In Parycek, P. et al. (eds.), *Electronic Participation*, LNCS, Springer International Publishing, Berlin, Germany, ISBN 978-3-319-64321-2, p. 149–160.

Carillo K., Scornavacca E., Za S. (2017). The role of media dependency in predicting continuance intention to use ubiquitous media systems. *Information & Management*, 54(3), 317–335

Chen, Q., Eriksson, T. & Giustiniano, L. (2017). Leading well pays off: mediating effects and multi-group analysis of strategic performance. *Management Decision*, 55(2), 400–412.

Depaoli P. and Za S. (2017), SME e-business development: an interaction based approach. In *Proceedings of the 25th European Conference on Information Systems (ECIS)*, Guimarães, Portugal, June 5–10, 2017

Di Pietro F., Spagnoletti P., Principe A. (2017) Fundraising across digital divide: evidences from charity crowdfunding, 14th conference of the Italian Chapter of AIS, Milano 6th–7th October

Federici, T. (2017) A Whiteboard Instead of Gantt and PERT: Is There a New Way to Manage Small Projects in Small Contexts? *Proceedings of the XVIII^o Workshop of Professors and Researchers of Organization Theory – WOA 2017*, Pisa (Italy), 16th–17th may.

Laura L., Me, G. (2017) Searching the Web for illegal content: the anatomy of a semantic search engine. *Soft Computing* 21(5): 1245–1252.

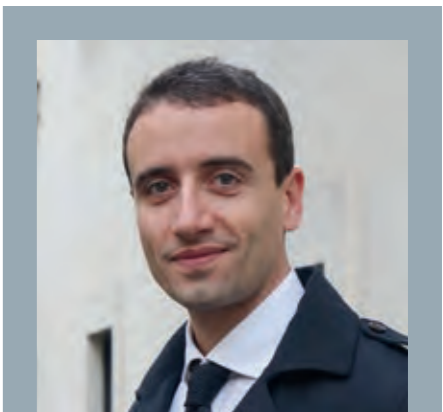
Me G., Spagnoletti P., Pesticcio L. (2017) Discovering hidden relations between Tor Marketplaces users. The 15th IEEE International Conference on Dependable, Autonomous and Secure Computing (DASC), Orlando FL, November 6th–10th

Resca, A. “An Organization-as-Platform and a Strategy-as-Practice for an Electronically Supported Booking Service in Healthcare” in Hoholm T. et al. (Eds) *Controversies in Healthcare Innovation*, Palgrave Macmillan, Houndmills, 2017.

Resca, A. Moruzzi, M. “The Origins of a Healthcare e-Booking System in the Municipality of Bologna” (with Mauro Moruzzi), in Aanestad, M. et al. (Eds) *Information Infrastructures within European Health Care*. Springer International Publishing, 2017. 245–260.

Spagnoletti P., Me G., Ceci F., Principe A. (2017) Securing national e-ID infrastructures: Tor networks as a source of threats, The 14th conference of the Italian Chapter of AIS, Milano 6th–7th October

Za S., Mettler T., Spagnoletti P., Winter R. (2017) Exploring Foundations for Using Simulations in IS Research, *Communications of the AIS*



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Za S., Braccini A.M. (2017) Tracing the Roots of the Organizational Benefits of IT Services. In: *Exploring Services Science*. IESS 2017. Lecture Notes in Business Information Processing, vol 279. Za S. et al. Eds. Springer, Cham, ISBN: 978-3-319-56925-3, pp. 3–11

EVENTS

XIV edition of the ItAIS conference,
Milano, October 6th–7^h

5th Innovation in Information
Infrastructures (III) Workshop,
Roma, November 7th–9th

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



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 will soon host two further chairs, the new Hilti Chair for Data and Application Security as well as the new Chair for Technology and Innovation.

Members of the institute have published in leading IS journals, including MISQ, 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 majors in Business Process Management and Data Science, 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 insti-

tute represents the Association for Information Systems (AIS) in Liechtenstein through the Liechtenstein Chapter of the AIS (LCAIS).

RESEARCH TOPICS

Our research focuses on the transformative power of digital technologies and their social, economic, and environmental impacts in six 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.

Green IS and sustainable development investigates how information and communication technology can reduce the human impact on the natural environment and increase social well-being.

Enterprise content management designs and evaluates methods and models that can help companies develop strategies to manage content.

Big data analytics explores methods, particularly text-mining algorithms and sentiment analyses, that can help make today's unprecedented amounts of available data useful for private and public organizations and for society at large.

Culture in BPM is primarily concerned with identifying the constituent elements of a cultural setting that supports process-management objectives.

Digital nudging investigates how small modifications to websites (i.e., nudges like setting defaults) affect decision-making in digital environments.

CURRENT RESEARCH PROJECTS

Data-driven estimation of market value in association football

Football players' market values have long been estimated by sports publications or by online crowds like transfermarkt.de. While crowd estimates have repeatedly been shown to be accurate, they are usually updated only once or twice a year. Together with ERCIS personal member Oliver Müller (IT University Copenhagen), Alexander Simons and Markus Weinmann from the University of Liechtenstein developed a statistical model for estimating market values that is more objective and efficient than crowd estimates. The research results, published in the European Journal of Operational Research, have been covered by various print and online media, including DER SPIEGEL, Sueddeutsche.de, and Zeit Online.

Digital Innovation in Entrepreneurial Organizations

Sanja Tumbas' dissertation spans the domains of information systems research and entrepreneurship to investigate the role that digital technologies play in entrepreneurial innovation. The dissertation's exploratory journey delves into the turbulent growth stage of entrepreneurial organizations and presents three studies with the objective of developing novel theory about the role of digital technologies during rapid entrepreneurial growth. The first study, introducing the concept of the digital façade was awarded the "Best Paper Award" at the International Conference on Information Systems (ICIS) in 2015. The second study investigates the digital ca-

pabilities facilitating rapid growth, and the third study explores digital ventures. The papers, co-authored together with Prof. Dr. Nicholas Berente and Prof. Dr. Jan vom Brocke, will be presented at ICIS 2017, with the rapid growth paper nominated for the best theory paper award.

AWARDS

AIS Senior Scholars Best Paper Award

Published in MISQe, "Using Text Analytics to Derive Customer Service Management Benefits from Unstructured Data," by Prof. Dr. Oliver Müller (IT University Copenhagen, Denmark), Prof. Dr. Iris Junglas (Florida State University, USA), Dr. Stefan Debortoli, and Prof. Dr. Jan vom Brocke (both University of Liechtenstein), received the AIS Senior Scholars Best Paper Award 2017.

Best Ph.D. Paper and Best Paper Award Nomination

"Tensions in Design Principle Formulation and Reuse," by Leona Chandra Kruse and Prof. Dr. Stefan Seidel, was published in the DESRIST 2017 Research in Progress proceedings "Designing the Digital Transformation" by A. Maedche, J. vom Brocke and A. Hevner in Karlsruhe. The article was nominated for Best Ph.D. Paper and Best Paper Award.

Students win international competitions

In November 2016, students in the master's program in Information Systems won the **SAP DemoJam at the SAP TechEd Conference in Barcelona** with their tool "UniBuddy."

Students in the master's program also won the Swiss regional final of the **Accenture Campus Innovation Challenge 2017** with their project "Cownect – Farming of the future."



Accenture Campus Innovation Challenge 2017



Students at SAP DemoJam

PUBLICATIONS

Hibbeln, M., Jenkins, J. L., Schneider, C., Valacich, J. S., & Weinmann, M. (2017). How Is Your User Feeling? Inferring Emotion Through Human-Computer Interaction Devices. *MIS Quarterly*, 41(1), 1-21.

Löser, F., Recker, J., vom Brocke, J., Molla, A., Zarnekow, R. (2017), How IT Executives Create Organizational Benefits by Translating Environmental Strategies into Green IS Initiatives. *Information Systems Journal (ISJ)*, 27(4), 503-553.

Müller, O., Simons, A., & Weinmann, M. (2017). Beyond Crowd Judgments: Data-Driven Estimation of Market Value in Association Football. *European Journal of Operational Research*, 263(2), 611-624.

Seidel, S., Chandra Kruse, L., Székely, N., Gau, M., & Stieger, D. (2017). Design principles for sensemaking support systems in environmental sustainability transformations. *European Journal of Information Systems*.

Spiegel, M., Schmiedel, T., vom Brocke, J. (2017), What Makes Change Harder – or Easier? *MIT Sloan Management Review*, Feb. 15, 2017.

Tumbas, S., Berente, N., vom Brocke, J. (2017), Three Types of Chief Digital Officers and the Reasons Organizations Adopt the Role, *Management Information Systems Quarterly Executive (MISQe)*, 16(2), 121-134.

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



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DISSERTATIONS

Ph.D. graduations summa cum laude



Sarah Zelt: "On the Concept and Role of Context in Business Process Management"



Sanja Tumbas: "Digital Innovation and Rapid Growth in Entrepreneurial Organizations"

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

› Kaunas University of Technology – Department of Information Systems ktu.edu



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 by prof. R. Butleris). In 2014, the Centre has been expanded as part of the move to the newly established Integrated Science, Studies and Business Centre (Valley) „Santaka“. As of autumn 2017, the Department and Centre jointly employed 23 researchers, teachers, and engineers. Being among the leading IS R&D hubs in Lithuania, the Department has built good relationships with the local IT companies and accumulated valuable research experience with Lithuanian and international partners.

Our academic work is directed towards 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. Recently, admissions to these programmes have been on the rise de-



spite the steadily falling higher education admittance in Lithuania. In 2017, 56 students were admitted to the Bachelor study programme, and 22 to the Master's. There were also ten PhD students at the Department.

RESEARCH TOPICS

The KTU Department of Information Systems / Centre of IS Design Technologies specialised in areas related to Information Systems 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

Establishing Modern Master-level Studies in Information Systems – MASTIS (2016-2018). Sponsored by the Erasmus+ Programme. The project is aimed at modernisation and/or establishment of second cycle IS studies in seven Ukrainian and

two Montenegrin universities. The efforts are coordinated by the University Lyon 2 (France) and Simon Kuznets Kharkiv National University of Economics (Ukraine) and involve seven other EU universities. In 2017, the ten course framework of the IS Master Curriculum based on the results of the stakeholder needs study was developed.

Professional Network of Master's Degrees in Informatics as a Second Competence – PROMIS (2013–2017). In 2017, work was concluded on this long-term initiative aimed at establishing the Master study programme of Informatics as a Second Competence at ten beneficiary universities from five Central Asian countries. Financed by the Tempus Programme and coordinated by the Grenoble Alpes University, this project also involved five other European universities and three enterprises, allowing for new and promising partnerships to develop.

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. At the end of 2017, the work starts with the design and implementation of tools for the statistical analysis of texts as well as automatic transcription of audio records based on deep neural networks and related technologies.

Smart Application Technology for Cloud Computing – SCAF (2017–2018). This EU Structural Funds co-financed project is coordinated by JSC “Sekasoft” and supervised by the Ministry of Education and Science and the Ministry of Economy of Lithuania. Here, the task is to develop a solution that would enable the application of machine learning and semantic analysis technologies for the development of self-adapting organisational management applications for Microsoft Office 365 and Microsoft Azure platforms.

Continued development of the national forestry IS infrastructure in cooperation with the Lithuanian state forestry institutions and local companies. In 2017, among other efforts, two innovative modules were being developed by our researchers, namely, the forestry cadaster data supply module and private property forestry projects management module.

EVENTS

23rd International Conference on Information and Software Technologies, ICIST 2017, organised by the Faculty of Informatics of KTU, took place in the resort town of Druskininkai near the capital city of Vilnius, Lithuania, on October 12–14.

PUBLICATIONS

Šukys, A.; Nemuraitė, L.; Butkienė, R. (2017): SBVR based natural language interface to ontologies // Information technology and control. Kaunas: KTU, 2017, vol. 46, iss. 1, p. 118–137.

Vaičiukynas E.; Verikas A.; Gelžinis A., Bačauskienė M. (2017): Detecting Parkinson's disease from sustained phonation and speech signals. PLoS ONE12(10): e0185613.

Morkevičius, A.; Bisikirskienė L.; Bleakley, G. (2017): Using a systems of systems modeling approach for developing Industrial Internet of Things applications // 12th System of Systems Engineering Conference (SoSE), Waikoloa, HI, 2017. IEEE, p. 1–6.

Morkevičius, A.; Aleksandravičienė, A.; Mažeika, D.; Bisikirskienė, L.; Strolia, Z. (2017): MBSE Grid: A Simplified SysML-Based Approach for Modeling Complex Systems // INCOSE International Symposium, Adelaide, Australia, 15–20 July 2017. Wiley, INCOSE International Symposium, vol. 27, iss. 1, p. 136–150.



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Mickevičiūtė, E.; Nemuraitė, L.; Butleris, R. (2016): Improving BPMN2 business process model to SBVR business vocabulary and business rules transformation with BPMN2 event naming patterns // Information technology and control. Kaunas: KTU, 2016, vol. 45, iss. 4, p. 443–451.

DISSERTATIONS

Algirdas Šukys, Querying Ontologies on the Basis of Semantics of Business Vocabulary and Business Rules.



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 16 permanent positions and two 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. The University of Agder also has a Department of ICT, responsible for education and research within computer science and ICT engineering.

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 organized 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 networks and mobile devices, human-centered sensing, social media, decision support, community resilience, cybersecurity, and critical infrastructures.

CURRENT RESEARCH PROJECTS

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 the 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.

Smart Mature Resilience (SMR) (2015–2018).

Project funded through the H2020 Secure Societies program. The project will develop and validate a European Resilience Management Guideline, using three pilot projects covering different security sectors in Critical Infrastructures, as well as climate change and social dynamics. The consortium involves University of Agder, TECNUN Universidad de Navarra, University of Strathclyde, Linköping University, ICLEI European Secretariat, and seven European pilot cities.

More info on:

<http://ciem.uia.no/project/smart-mature-resilience>



TELMA (Telemedicine in Agder) (2016–2019).

Project funded by The Research Council of Norway. The project consortium consists of University of Agder, three municipalities, and the regional hospital trust. The project aims at developing and implementing telemedicine for Chronic obstructive pulmonary disease (COPD), diabetes and congestional heart failure, and research the benefit realization from this.

AWARDS

Polyxeni Vassilakopoulou from the University of Agder received the Best Paper award at the Scandinavian Conference on Health Informatics (SHI 2017), with the paper: "Collective action in national e-health initiatives: findings from a cross-analysis of the Norwegian and Greek e-prescription initiatives". Co-authors were Aleksandra Pesaljevic, Nicolas Marmaras, and Margunn Aanestad, from the University of Oslo and University of Athens.

EVENTS

The Centre for eHealth at UiA hosted the 15th Scandinavian Conference on Health Informatics (SHI 2017) in Kristiansand on August 29–30, 2017. The conference also included a PhD consortium on health informatics.

PUBLICATIONS

Busch, P. A. (2017). The Role of Contextual Factors in the Influence of ICT on Street-Level Discretion. Proceedings of HICSS-50.

Askedal, K.; Flak, L. S.; Abildsnes, E. (2017). Reviewing Effects of ICT in Primary Healthcare Services: A Public Value Perspective. Proceedings of AMCIS 2017

Garmann-Johnsen, N. F.; Eikebrokk, T. R. (2017). Dynamic capabilities in e-health innovation: Implications for policies. Health Policy and Technology, 6(3), 292-301.

Grisot, M.; Vassilakopoulou, P. (2017). Re-Infrastructuring for eHealth: Dealing with Turns in Infrastructure Development. Computer Supported Cooperative Work (CSCW), 26(1-2), 7–31.

Hausvik, G. I. (2017). Information Quality in Healthcare Delivery Improvement: A Critical Realist Approach. Proceedings of AMCIS 2017.

Lazareva, A. (2017). Facilitating Synchronous Collaborative Writing with a Collaboration Script. Proceedings of ISD 2017.

Llave, M.; Olsen, D. H. (2017). Business Intelligence and Analytics in Small and Medium-sized Enterprises: A Systematic Literature Review. Proceedings of CENTERIS 2017.

Moe, C.; Newman, M.; Sein, M. (2017). The public procurement of information systems: dialectics in requirements specification. European Journal of Information Systems, 26(2), 143–163.



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Sakurai, M.; Majchrzak, T.; Latinos, V. (2017). Towards a Framework for Cross-Sector Collaboration: Implementing a Resilience Information Portal. Proceedings of ISCRAM-2017.

Thapa, D.; Budhathoki, N.; Munkvold, B. E. (forthcoming). Analyzing Crisis Response through Actor-Network Theory: The Case of Kathmandu Living Labs. Communications of the Association for Information Systems.

Thapa, D.; Sein, M. (2017). Trajectory of Affordances: Insights from a case of telemedicine in Nepal. Information Systems Journal, forthcoming.





ABOUT THE INSTITUTION

With almost 27,000 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 75 different fields with over 220 specializations.

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 24th Conference on Advance Information Systems Engineering (CAiSE 2012). The Department is the partner of the European Research Center for Information Systems (ERCIS) consortium.

The Department is involved in the following international and research initiatives:



- Polish Chapter of Association for Information Systems – PLAIS (awarded an outstanding chapter of the AIS in 2014 and 2016)



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



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

The Department of Business Informatics established a Polish Chapter of AIS – PLAIS. The Polish Chapter of Association for Information Systems (PLAIS) 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-organizes international and domestic conferences on Systems Analysis and Design as well as on Business Informatics and Systems Engineering.

RESEARCH TOPICS

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

- Agility, SCRUM
- Big Data
- Business Informatics
- Business Processes Modeling
- Computer Networks
- Computer Programming
- Databases
- E-Business
- E-Learning
- Enterprise Modeling
- 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. A survey on IT in Polish enterprises in respect of IT occupational culture (ITOC) has been conducted with a funding grant by the energy producer Energa. The results are going to be published in numerous research papers.

EVENTS

The 10th SIGSAND/PLAIS EuroSymposium'2017 (Gdansk, Poland, September 22, 2017)

PUBLICATIONS

Wrycza S., Maślankowski J. (ed.), Information systems : Development, Research, Applications, Education: 10th SIGSAND/PLAIS EuroSymposium 2017, Gdansk, Poland, September 22, 2017: Proceedings Springer, LNBP 300, 2017.

Wrycza S., Marcinkowski B., Gajda D., The enriched UTAUT model for the acceptance of software engineering tools in academic education, Information Systems Management, 2017, Vol. 34, iss. 1, p. 38–49.

Kuciapski, M., A model of mobile technologies acceptance for knowledge transfer by employees. Journal of Knowledge Management; 2017, Vol. 21 Issue 5, p. 1053–1076.

OUTLOOK

In 2018, the Department of Business Informatics will organize the 11th anniversary EuroSymposium conference. More information will be available on eurosymposium.eu.

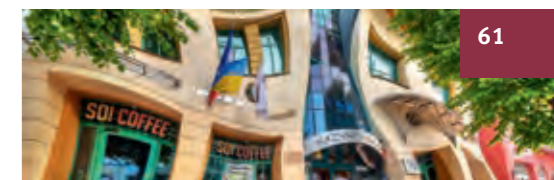


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Wrocław University
of Science and Technology

ABOUT THE INSTITUTION

Wrocław University of Science and Technology (WUST) is a public institution founded in 1945, but its academic legacy dates back to the Lviv University in 1661. Now WUST belongs to the best universities in Poland – over 32.000 students study here under the guidance of around 2.000 academic teachers, at 16 faculties. Recently, the position in the research and teaching field places WUST among the top four universities in Poland. The degrees awarded by WUST, e.g. the HR Excellence in Research logo, are a symbol of high quality of research and education, confirmed by the European Commission, National Accreditation Committee and the Accreditation Committee of Universities of Technology.

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 18 computer science scientists and 10 Ph.D. students.

We regularly co-organize three international scientific conferences: Asian Conference on Intelligent Information and Database Systems, International Conference on Computational Collective Intelligence, and

International Conference on Multimedia and Network Information Systems.

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 cares for two specializations for full-time second cycle studies in the field of Computer Science.

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.
- Knowledge Management Systems referred to any kind of ISs 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.

- Recommendation and Personalization in Web Systems applied in net-news filtering, web recommender, personalized newspaper, e-commerce, user interface recommendation, negotiation systems, etc.

- Ensemble and Hybrid Models that combined linear and non-linear features of existing models of Computational Intelligence.

- Semantic Information Retrieval ranged from link structure analysis to using social network relationship semantics.

- Multimedia Information Processing covered the following aspects: audio signal processing, image recognition and video clustering, lossy 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 (LMS) and Learning Content Management Systems (LCMS).

CURRENT RESEARCH PROJECTS

The majority of current research projects in DIS were supported directly from the Ministry of Science and Higher Education in Poland as a core funding for statutory R&D activities in WUST. The main topic is Collective Intelligence from heterogeneous sources. The knowledge states referred from these units partially reflect the real knowledge state of a subject in the real world, but due to incompleteness and uncertainty the extent remains unknown.

For four years (2013–16) the DIS has been part of the ICT COST Action IC1302: Semantic Keyword-based Search on Structured Data Sources (KEYSTONE), investigating synergies from fields like Semantic Web, AI or Machine Learning.

EVENTS

The 9th Asian Conference on Intelligent Information and Database Systems (ACIIDS 2017) took place in Kanazawa, Japan, April 3–5, 2017. WUST and Japan Advanced Institute of Science and Technology jointly organized the event. 154 papers with the highest quality were selected for publication in the two volumes of LNCS/LNAI (Vol. 10191 and 10192).

The 9th International Conference on Computational Collective Intelligence (ICCCI 2017) took place in Nicosia, Cyprus, September 27–29, 2017. The conference was co-organized by the University of Cyprus and WUST. 114 best papers were selected for publication in two volumes of LNCS/LNAI (Vol. 10448 and 10449).

AWARDS

According to the recent Springer Reports of May 2017 Proceedings of ACIIDS and Proceedings of ICCCI belong to the top 25% most downloaded eBooks in the relevant SpringerLink eBook Collection.

Dr. Elzbieta Kukla from DIS received the Polish Medal of the Commission of National Education for outstanding services to schooling and education.

PUBLICATIONS

Van Cuong Tran, Ngoc Thanh Nguyen, Hamido Fujita, Dinh Tuyen Hoang, Dosam Hwang: A combination of active learning and self-learning for named entity recognition on Twitter using conditional random fields. *Knowl.-Based Syst.* 132: 179–187 (2017)

Adrianna Kozierkiewicz-Hetmanska: The analysis of expert opinions' consensus quality. *Information Fusion* 34: 80–86 (2017)

Adrianna Kozierkiewicz-Hetmanska, Marcin Pietranik: The knowledge increase estimation framework for ontology integration on the concept level. *Journal of Intelligent and Fuzzy Systems* 32(2): 1161–1172 (2017)

Dariusz Krol, Filip Nowakowski: Development of a real-time multi-agent system: A practical study on ensuring timing correctness. *Journal of Intelligent and Fuzzy Systems* 32(2): 1461–1473 (2017)

Marcin Maleszka: Observing collective knowledge state during integration. *Journal of Intelligent and Fuzzy Systems* 32(2): 1241–1252 (2017)

Ngoc Thanh Nguyen, Manuel Núñez, Bogdan Trawinski: Collective intelligent information and database systems. *Journal of Intelligent and Fuzzy Systems* 32(2): 1157–1160 (2017)

Ngoc Thanh Nguyen, Van Du Nguyen, Dosam Hwang: An influence analysis of the number of members on the quality of knowledge in a collective. *Journal of Intelligent and Fuzzy Systems* 32(2): 1217–1228 (2017)

Andrzej Sieminski, Marek Kopel: Comparing efficiency of ACO parallel implementations. *Journal of Intelligent and Fuzzy Systems* 32(2): 1377–1388 (2017)

Tram Tran, Bay Vo, Tho Thi Ngoc Le, Ngoc Thanh Nguyen: Text Clustering Using Frequent Weighted Utility Itemsets. *Cybernetics and Systems* 48(3): 193–209 (2017)

HABILITATIONS

Dr. Dariusz Krol finished his habilitation (Doctor of Science) on September 26, 2017 on the topic “Modelling data propagation in multi-agent and network systems” at WUST to conduct self-contained university research and teaching.

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University of Minho
School of Engineering

ABOUT THE INSTITUTION

The Department of Information Systems is located in the Campus de Azurém of University of Minho, in the city of Guimarães, the cradle city of Portugal. The department was established in the late 1990s, after the creation of a graduation program in Information Systems that involved the co-operation of two schools: Engineering, and Economics and Management. The Department of Information Systems currently offers an integrated master (5 years degree program) in Engineering Management of Information Systems, a master on Information Systems and a doctoral program on Information Systems and Technologies.

The department is associated to a R&D unit – ALGORTIMI – that, besides information systems, encompasses research activities in a wide range of areas including computer science, computer networks and pervasive computing, industrial electronics, industrial engineering, optimization, among others.

The Department of Information Systems promotes academic work that aims at the

intersection of information technologies, information, and human and social pursuits. Particular importance is given to aspects related to design activities involving those objects of interest. And their combination leads to the need of combining approaches from engineering and technology with approaches from the organizational studies, management, economics and other social sciences.

RESEARCH TOPICS

The IST (Information Systems and Technologies) research line of ALGORITMI include three main research groups:

Intelligent Data Systems group that deals with technologies, tools, models and techniques related to the 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 performing research supported by interdisciplinary approaches and research methods originated in the societal sciences and engineering, which are used to understand organizational and society contexts of IS/IT adoption and use, and to develop new tools for creating innovative or improved IS/IT professional practices.

Software Engineering and Management group devoted to the advance of the state-of-the-art of software-based information systems, both on the engineering and management aspects of the following research tracks: (i) modeling approaches for analysis and design; (ii) business and location-enhanced database systems; (iii) metadata and ontologies for the semantic Web; and (iv) process and project management life-cycles.

Some of the research projects currently being performed in the IST research line include:

- EQUAL-IST – Gender Equality Plans for Information Sciences and Technology Research Institutions, project Horizon 2020, GERI-4-2015 – Support to research organisations to implement gender equality plans, Partners: ViLabs OE (Greece), European Centre for Women and Technology (Norway), University of Muenster (Germany), University of Liechtenstein (Liechtenstein), University of Turku (Finland), Kaunas University of Technology (Lithuania), Università di Modena e Reggio Emilia (Italy), University of Minho (Portugal), Simon Kuznets Kharkiv National University of Economics (Ukraine). Starting: 1-06-2016, Duration: 36 months

- Jobs for Work 4.0 – The Future of Employment, ERASMUS+, Key Action II – Strategic Partnerships for vocational education and training – N.º 2016-1-PT01-KA202-022790, PARTNERS: Universidade do Minho (Portugal), Wissenschaftsinitiative Niederösterreich (Austria), INTEGRA INSTITUT, Institut za razvoj clovekovih (Slovenia), QUALED občianske zdruzenie

pre kvalifikáciu (Slovakia), Centre For Advancement Of Research And Development in Educational Technology LTD-CARDET (Cyprus), Meath Community Rural And Social Development Partnership Limited (Ireland), Ente Bilaterale Veneto (Italy); Starting: 10-2017, Duration: 24 months.

- Project SmartEGOV, United Nations University – Operating Unit on Policy-Driven Electronic Governance, University of Minho, Started in January 2017.

- Some members of the department participate in the “Innovative Car HMI” programme, which results from a partnership of RDT between the Bosch Car Multimedia Portugal and the University of Minho. The Innovative Car HMI programme is the result of two applications: INNOVCAR and iFACTORY. Its size and complexity takes the two consortium entities to operationalize it as a single programme, with a total budget of 54.700.000,00 €.

EVENTS

In 2017, the main event organized by the Department of Information Systems was the 25th European Conference on Information Systems (June 5th–10th) – www.ecis2017.eu. About 550 people from 43 countries and 250 different institutions attended the conference. In addition to this event of great international visibility, the following events were also held: Annual Conference of the Portuguese Chapter of AIS (CAPSI2017 – June 6–7, 2017), CENTERIS 2017 – Conference on ENTERprise Information Systems (Barcelona, 8 to 10 November 2017), ProjMAN 2017 – International Conference on Project MANAGEMENT (Barcelona, 8 to 10 November 2017).

PUBLICATIONS

Ciampi M.M., da Rocha Brito C., Amaral L., Vasconcelos R., Barros V.F.A. (2017). Engineering Challenging Entrepreneurship Practice. In: Auer M., Guralnick D., Uhoimbi J. (eds) Interactive Collaborative Learning. ICL 2016. Advances in Intelligent Systems and Computing, vol 545. Springer, Cham

Bianchi, I., Sousa, R., Pereira, R., & Hillegersberg, J. (2017). Baseline Mechanisms For It Governance At Universities. ECIS2017 Conference, Guimarães, Portugal, 8–10 June.

Costa, C., & Santos, M. Y. (2017). The data scientist profile and its representativeness in the European e-Competence framework and the skills framework for the information age. International Journal of Information Management, 37(6), 726–734.

Dhillon, G., Syed, R., & de Sá-Soares, F. (2017). Information security concerns in IT outsourcing: Identifying (in) congruence between clients and vendors. Information & Management, 54(4), 452–464.

Fraga, M. G., Varajão, J., & Oliveira, P. (2017). ISOPM – Framework for IT/IS Outsourcing Project Management. International Journal of Enterprise Information Systems, 13(2), 1–21.

Monteiro, C. S., Costa, C., Pina, A., Santos, M. Y., & Ferrão, P. (2017). An Urban Building Database (UBD) supporting a Smart City Information System. Energy and Buildings (In Press).

Santos, M. Y., e Sá, J. O., Andrade, C., Lima, F. V., Costa, E., Costa, C., ... & Galvão, J. (2017). A Big Data system supporting Bosch Braga Industry 4.0 strategy. International Journal of Information Management, 37(6), 750–760.

Santos, M. Y., Martinho, B., & Costa, C. (2017). Modelling and implementing big data warehouses for decision support. Journal of Management Analytics, 4(2), 111–129.

Silva, A., Varajão, J., Pereira, J.L., & Pinto, C.S., (2017). Performance Appraisal Approaches and Methods for IT/IS Projects: A Review. International Journal of Human Capital and Information Technology Professionals, 8(3), 15–28.



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Silva, C., & I. Ramos (2017). An Empirical Study on Crowdsourcing Innovation Intermediaries, 29th IBIMA Conference, Vienna, Austria, 3–4 May 2017

Topi, H., Karsten, H., Brown, S., Carvalho, J. A., Donnellan, B., Shen, J., ... & Thouin, M. F. (2017). MSIS 2016 Global Competency Model for Graduate Degree Programs in Information Systems. CAIS, 40, 18.

Varajão, J., Colomo-Palacios, R., & Silva, H. (2017). ISO 21500: 2012 and PMBoK 5 processes in information systems project management. Computer Standards & Interfaces, 50, 216–222.





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 internationalise 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. The HSE has four campuses, 2,500 faculty members, 25,000 students, 35,000 alumni. Founded in 2002, the HSE's 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 faculty aims to attract talented and motivated young people to form Russia's future entrepreneurial and administrative elite professionals in business informatics.

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

ICANN new gTLDs program analysis for Russia

The project analyses the impact of new gTLDs on Russian market.

World IT project

The main research idea is to understand the major IS issues in the world in the context of their unique cultural, economic, political, religious and societal environments. It is a study on the evolutionary dynamics of social networks based on conditional simulation-textured resource environment.



AWARDS

Students from the School of Business Informatics won the Space app Challenge Hackathon by NASA.

Students from the School of Business Informatics won the SAP InnoJam&BootCamp.

Students from the School of Business Informatics won the HackUPC hackathon.

Students from the School of Business Informatics within their team Dolphin Blockchain Intelligence (Dolphin BI) won the Startupbootcamp program.

The master programme "Business Informatics" was awarded with the public-professional accreditation from the Russian Association of IT Companies.

EVENTS

Lecturers from the School of Business Informatics participated in the Winter school for University professors of SAP CIS, Moscow, Russia, February 2017.

Round table on digital transformation based telecommunication technologies.
<https://bi.hse.ru/news/204512571.html>

Opening of Sap Next-Gen Lab at HSE and University of Muenster.
<https://bi.hse.ru/news/206073820.html>

International Workshop on the Internet of Things and Smart Services (ITSS2017) within the 19th IEEE Conference on Business Informatics 2017, Thessaloniki, Greece, July 2017. <https://bi.hse.ru/en/announcements/202626319.html>

Annual meeting and a workshop of SIG on Big Data Application organised by the Special Interest Group (SIG) on Big Data Analytics within the International Conference on Information Systems (ICIS 2017), Seoul, South Korea, December 2017.
<https://bm.hse.ru/bigdataapplication/>

2nd French-Russian Workshop on Big Data Applications, Moscow, Russia, October 2017.
<https://bi.hse.ru/en/rfw/2017/>

SELECTED PUBLICATIONS

Big Data Normalization for Massively Parallel Processing Databases
Golov N., Rönnbäck L. Computer Standards and Interfaces. 2017.

Business Architecture Flexibility as a Result of Knowledge-Intensive Process Management
Gromoff A. I., Bilinkis (Stavenko) J., Kazantsev N. Global Journal of Flexible Systems Management. 2017. Vol. 18. No. 1. P. 73–86.



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Leveraging heterogeneous device connectivity in a converged 5G-IoT ecosystem
Galinina O., Andreev S., Komarov M. M. et al. Computer Networks. 2017.

Model for organizing cargo transportation with an initial station of departure and a final station of cargo distribution
Khachatryan N., Akopov A. S. Business Informatics. 2017. No. 1(39). P. 25–35.

DISSERTATIONS/HABILITATIONS

D. Neklyudov "Pricing policy development for telecommunication company"

HIGHER SCHOOL OF ECONOMICS – NIZHNY NOVGOROD



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 mathematical and computer modeling. Two laboratories TAPRADESS (Theory and Practice of Decision Support Systems) and LATNA (Laboratory of Algorithms and Technologies for Networks Analysis) 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 behavior 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, and are supplemented by practical methods of integration and verification of complex corporate service oriented systems.

- New mathematical models and multi-agent 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.

CURRENT RESEARCH PROJECTS

Knowledge technologies for improving multi-modal logistics operations in seaports. The project team performs an analysis of business processes and information technologies in the framework of modern port logistics operations. The goal of the project is to develop high-level models of adaptive business processes and distributed software implementations using multi-agent technologies. The project is conducted in co-operation with INSA-Rouen (France).

Russian Foundation for Human Research grant “Application of robust statistical methods to network structures of stock market”.

The grant RFFI 16-06-00184-A (2016–2018) “Development and research of online discussion’s models based on the political news discussing”.

This research project aims at developing new scientific knowledge about communication processes, which emerge during Internet discussions. Main results of the research will include analytical and simulation models of “online” internet political discussions. These models will map categorical matrices and conceptual models detected in the discussion texts to the multi-dimensional space of agents’ opinions.

Employees of the laboratory LATAS won the contest of the Russian Science Foundation for the extension of the grant 14-41-00039 Clustering and Search Techniques in Large Scale Networks.

AWARDS

Senior research fellow of LATNA Andrei Savchenko has won the Grant of the President of the Russian Federation for young PhD holders.

EVENTS

The 7th International Conference on Network Analysis (June 22–24, 2017)

The Summer School on Operational Research and Applications (May 10–14, 2017)

The Workshop “Organizations Engineering Days”, September 6–9, 2017 with the participation of Prof. Erik Proper, Institute of Science and Technology (Luxembourg)



Participating in Program Committees of the following conferences:

EOMAS-2017, E. Babkin (Co-chair), P. Malyzhenkov (PC Member)

EEWC-2017, E. Babkin (PC Member)

SELECTED PUBLICATIONS

Babkin E., Malyzhenkov P., Rossi F., “The Perspectives of DEMO Application to COSO Internal Audit Framework Risks Mitigation” in *Advances in Enterprise Engineering XI*. EEWC 2017. Lecture Notes in Business Information Processing (eds. Aveiro D., Pergl R., Guizzardi G., Almeida J., Magalhães R., Lekkerkerk H.), vol 284. Springer, Cham, 2017, DOI: 10.1007/978-3-319-57955-9_5.

Malyzhenkov P., Ivanova M. “An Enterprise Architecture-Based Approach to the IT-Business Alignment: An Integration of SAM and TOGAF Framework” in: *Enterprise and Organizational Modeling and Simulation*, 13th International Workshop, EOMAS 2017, held at CAISE 2017, Essen, Germany, June 12–13, 2017, Selected Papers Vol. 298. Springer International Publishing AG, 2017.

Kalyagin V. A., Pardalos P. M., Special Issue on Clustering and Search Techniques in Large Scale Networks, Volume 11, Issue 2, February 2017, Springer.

Kalyagin V. A., Pardalos P. M., Nikolaev A. I. Models, Algorithms, and Technologies for Network Analysis. Springer Proceedings in Mathematics & Statistics Vol. 197. Springer International Publishing, 2017.

DISSERTATIONS/HABILITATIONS

Tatyana Poletaeva, defense of the doctoral thesis «Ontological Foundations of Multi-Agent Framework for Operational Data Processing», supervisors: Prof. Habib Abdulrab (INSA, Rouen, France), Prof. Eduard Babkin (Higher School of Economics in Nizhny Novgorod, Russia).

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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 of Information Systems, Human Resource and Educational Systems, 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 of Organizational Sciences faces complex dynamic management systems, covering aspects from human resources, information systems, business processes and general management. Research is organized in many laboratories and in the eCenter. All are involved in research projects, prototyping, consulting, education and training at national and international level. Their activities have been organized and are 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. Furthermore, the Faculty has established connections with numerous institutes, faculties and universities

around the world and strives to enhance its internationally renowned reputation. Bilateral cooperation has occurred in several forms, including the exchange of higher education professors, participation in various research projects, and student exchange.

RESEARCH TOPICS

The research area of the Faculty of Organizational Sciences is focused on investigation of complex dynamic management systems, covering various aspects from human resources, information systems, business processes and general management. The significant focus is on implementation of newest ICT and their impact on new business model development, and increasing effectiveness and efficiency of business and government organizations, ICT industry, universities and society as a whole. Majority of our research and development activities are carried out within the following research topics:

- Business models and business model innovation
- Management of information systems
- Business processes management
- ERP systems
- eCommerce and eBusiness
- eCollaboration
- Social CRM
- Social media
- Cloud computing
- Internet of Things



- Decision support systems
- Simulation systems and models
- Knowledge management
- Organizational learning
- Business intelligence
- Data mining
- Big data
- Quality management
- Asset management
- Corporate sustainability
- Open innovation
- Living labs

CURRENT RESEARCH PROJECTS

EU projects:

- ENVISION – Empowering SME business model innovation, Horizon 2020
- MASTIS – Establishing Modern Master-level Studies in Information Systems, Erasmus+ KA2

National research programmes:

- Decision support systems in the global e-business, Research programme, P5-0018
- Impact of management, organizational learning and knowledge management in modern organizations, Research programme, P5-0364-058

Bilateral projects:

- Evolutionary and Bio-Inspired Algorithms, Based Efficient Control of Cyber-physical Systems & Internet of Things, Bilateral project SI-RU
- Development of Wheelchair for Disabled Persons as a Speech Controlled Cyber Physical System, Bilateral project SI-MNE

EVENTS

Events in 2017:

30th Bled eConference: Digital Transformation – From connecting things to transforming our lives, June 18–21, 2017 <http://bledconference.org>

36th International Conference on Organizational Science Development Responsible organization March 22–24, 2017, Portorož, Slovenia <http://fov.uni-mb.si/conference>

14th International Symposium on Operations Research in Slovenia September 27–29, 2017, Bled, Slovenia <http://sor17.fov.uni-mb.si>

Education in Information Society October 13, 2017, Kranj, Slovenia <http://vivid.fov.uni-mb.si/>

Next Conference:

31st Bled eConference: Digital Transformation: Meeting the Challenges, June 17–20, 2018, Bled Slovenia <http://bledconference.org>

SELECTED PUBLICATIONS

BOHANEK, Marko, KLJAJIĆ BORŠTNAR, Mirjana, ROBNIK ŠIKONJA, Marko. *Explaining machine learning models in sales predictions. Expert systems with applications*, ISSN 0957-4174. [Print ed.], 2017, vol. 71, str. 416-428, ilustr. <http://dx.doi.org/10.1016/j.eswa.2016.11.010>, doi: 10.1016/j.eswa.2016.11.010.

BOHANEK, Marko, ROBNIK ŠIKONJA, Marko, KLJAJIĆ BORŠTNAR, Mirjana. *Decision-making framework with double-loop learning through interpretable black-box machine learning models. Industrial management + data systems*, ISSN 0263-5577, 2017, vol. 117, no. 7, str. 1389-1406, tabele, graf. prikazi, doi: 10.1108/IMDS-09-2016-0409.

BOGATAJ HABJAN, Kristina, PUCIHAR, Andreja. *Cloud computing adoption business model factors: does enterprise size matter?. Inžinerinq ekonomika*, ISSN 1392-

2785, 2017, vol. 28, no. 3, str. 253-261, tabele. <http://inzeke.ktu.lt/index.php/EE/article/view/17422/8809>, doi: 10.5755/jo1.ee.28.3.17422.

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NIKOLOSKI, Trajče, UDOVČ, Andrej, PAVLOVIČ, Martin, RAJKOVIČ, Uroš. *Farm reorientation assessment model based on multi-criteria decision making. Computers and electronics in agriculture*, ISSN 0168-1699. [Print ed.], 2017, vol. 140, str. 237-243, ilustr. <http://www.sciencedirect.com/science/article/pii/S016816991630953X>, doi: 10.1016/j.compag.2017.06.011.

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BOHANEK, Marko, ROBNIK ŠIKONJA, Marko, KLJAJIĆ BORŠTNAR, Mirjana. *Organizational learning supported by machine learning models coupled with general explanation methods : a case of B2B sales forecasting. Organizacija: revija za management, informatiko in kadre*, ISSN 1318-5454.

BOGATAJ HABJAN, Kristina, PUCIHAR, Andreja. *The importance of business model factors for cloud computing adoption : role of previous experiences. Organizacija: revija za management, informatiko in kadre*, ISSN 1318-5454. [Tiskana izd.], avg. 2017, vol. 50, no. 3, str. 255–273, graf. prikazi.



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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 programs 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 at 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. BA research group extracts information from data and uses it to derive knowledge and finally wisdom. BA research group's 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 system, and smart factory. Smart Service System research group's main research topics are (1) Human-centered system UI / UX design, (2) Smart healthcare service system, and (3) Smart transportation / energy / information network system.

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.



CURRENT RESEARCH PROJECTS

Development of a mining algorithm for the best/worst equipment flow in semiconductor manufacturing (Samsung Electronics, Feb. 2017 – Dec. 2017)

Development of IoT Intelligence Services based on Multi-device/Multi-source data (Samsung Electronics, May 2017 – Sep. 2017)

Development of an Energy Big Data Analytics System (POSCO, Jan. 2017 – Nov. 2017)
A methodology for clinical pathway development based on data mining / process mining and CP management system development (National Research Foundation of Korea, Jun. 2016 – May 2019)

Mining of Technology Functions for Customer-Driven Product Development (National Research Foundation of Korea, Jun. 2016 – May 2019)

Propelling business process management by research and innovation staff exchange (National Research Foundation of Korea, Dec. 2014 – Nov. 2018)

Development of rating program for LKAS based on the statistical analysis of LKAS data (Hyundai NGV, May 2016 – Jul. 2017)

Strategic Use of AI Methodologies in Steel Industry (Jul. 2016 – Feb. 2017)

AWARDS

Ki-Hun Kim, a Ph.D candidate, won the Highly Commended Award at International Research Symposium in Service Management (IRSSM-8), August 1–5, 2017.

Hyeon-Wuk Tae, a Ph.D candidate, won the Best Paper Award at the annual conference on Korean Insurance Academic Society, August 17–18, 2017.

SELECTED PUBLICATIONS

Shin, W. S., Lee, H-K., Kim, K. J., & Chung, B. D., "Development a quality prioritization procedure for IPTV service", *Service Business*, 11(2), 427–449, June 2017.

Lee, W., Jun, C. H., & Lee, J. S. "Instance categorization by support vector machines to adjust weights in AdaBoost for imbalanced data classification", *Information Sciences*, 381, 92–103, March 2017.

Pender, J. & Ko, Y. M., "Approximations for the Queue Length Distributions of Time-Varying Many-Server Queues," *INFORMS Journal on Computing*, 29(4), 688–704, 2017.

J. Wang, G.-J. Noh, B.-M. Choi, S.-W. Ku, P. Joo, W.-S. Jung, S. Kim, & H. Lee. "Suppressed neural complexity during ketamine- and propofol-induced unconsciousness", *Neuroscience letters*, 653, 320–325, 2017.



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Kim, J., Lee, J., Lee, J., Choi, I., "An Integrated Process-Related Risk Management Approach to Proactive Threat and Opportunity Handling: A Framework and Rule Language", *Knowledge and Process Management*, 24(1), 23–37, 2017. 10. 19.

Park, N.B., Park, S.Y., Kim, J.J., Choi, D.G., Yun, B.Y. & Hong, J.C., "Technical and economic model of highly efficient boiler technologies in the Korean industrial sector", *Energy*, 121, 884–891, 2017.

Cho, M, Song, M., Comuzzi, M., Yoo, S., "Evaluating the effect of best practices for business process redesign: an evidence-based approach based on process mining techniques.", *Decision Support Systems* (accepted), 2017.





ABOUT THE INSTITUTION

The main campus of Luleå University of Technology (LTU) is located in Luleå, Sweden, on the northern east of the Gulf of Bothnia. The university has campuses in Kiruna, Skellefteå, Piteå, and Filipstad. In 2017, the university had 1 800 employees and 15 000 students. Research is carried out in close cooperation with partners from industry such as Bosch, Ericsson, Scania, LKAB and SKF, with partners from the public sector and with other leading international universities. Externally funded research has a turnover of more than EUR 90 million per year.

Information Systems (IS) research at LTU is defined by its interdisciplinary research approach, which covers topics connected to the design and use of information technology in relation to people, organizations and societies. IS involves, currently, a faculty of 25 persons and 10 active doctoral students. IS-related research is also conducted within other research subjects such as Data Science, Industrial Marketing and Mobile, Pervasive Computing, Industrial Internet, e-Communication, e-Commerce, e-Government, and e-Health.

RESEARCH TOPICS

The following diagram explains the six main research areas in the IS research group, together with a contact person at each group:

1. Open and user centered IT service innovations enable the development of smart cities and smart regions. Within this area,

we are especially interested in understanding people's needs, value and motivators related to service innovations such as Internet of Things, energy monitoring services and privacy enhancement/awareness services. We also carry out research within the Living Lab area in where the focus is to understand and research Living Lab as a phenomenon and its contribution to innovation processes.

2. Product Innovation regards services as a driver for individual, organizational, and societal change. To achieve viable change, there needs to be continuous interaction between design and evaluation processes. The challenges include enabling sustainable life through transformative services, creating and maintaining a service innovation culture, enhancing the service experience through co-creation, and assessing the value of services.

3. The Scandinavian tradition has a strong focus on user oriented design of information systems. The systems science is based on soft systems thinking and contributes with an approach to make different user needs explicit. These two parts together, integrate user needs with technical aspects in early phases of product development. Our research is focusing on sharing experience based knowledge in multifunctional design team. The perspective to identify and analyze needs that our research work is focusing on, to be used to improve existing products, which is particularly useful for innovations.

4. Information Security focuses on technical, managerial, and behavioral aspects of information, network and critical infrastructure security, as well as pedagogical issues of online security education. The topic covers security as a part of organizational practice, security and IT-management practices, business risk practices, privacy, and technical design of enterprise security controls. An international, online master's program of information security and an online information security laboratory for both educational and research purposes are continuously developed.

5. Big Data Analytics is one of the key research areas within the information systems group. We have three PhD students writing their thesis utilizing analytics and big data for various purposes such as: smart cities, enterprise systems, and digital service innovation. Also, we have conducted research related to: fact-based decision making, big data epistemological challenges, and big data analytics framework.

6. Sustainable Data and Information Management regards data, information, and knowledge as a valuable resource that needs to be managed, cultivated, and utilized systematically throughout its lifecycle both in enterprises and in the public sector.

RECENT PROJECTS

LTU is an active member in the MASTIS Erasmus+ -project (<https://mastis.pro>) that aims at establishing modern master studies in information systems. The project was initiated through the ERCIS-network.

U4IoT (2017–2020) is a H2020 coordination and support action project, funded by the European Commission, supporting LSPs with user engagement expertise and Living Lab processes.

OrganiCity (<http://organicity.eu>) is an EU project with € 7.2m in funding that puts people at the center of the development of future cities. The project brings together 3

leading smart cities and a total of 15 consortium members with great diversity in skills and experience.

I3 – Innovations & Industrial Internet – (<http://www.interregnord.com/>) aims at supporting product and service development in the northern regions of Norway, Sweden and Finland and promote cross-border collaboration.

Nimble (2016–2019) is a Horizon 2020 Research and Innovation action. The main objective is to develop the infrastructure for a cloud-based, Industrie 4.0, Internet-of-things-enabled B2B platform on which European manufacturing firms can register, publish machine-readable catalogs for products and services, search for suitable supply chain partners, negotiate contracts and supply logistics, and develop private and secure B2B and M2M information exchange channels to optimize business work flows.

EVENTS

The third biennial Luleå seminar on design-oriented research was organized by IS and Maung Sein and Tero Päiväranta in Autumn 2017. The topic for the seminar was design research and action design research. Previous mentors having participated in the seminar include Sandeep Puroo, Matti Rossi and Oliver Müller.

AWARDS AND ACHIEVEMENTS

Students of the Master Programme in Information Security at Luleå University of Technology have won a Cyber defense exercise arranged by the Swedish Armed Forces in 2016.

A student on the Master Programme in Information Security at Luleå University of Technology has won the ISACA Sweden Chapter Scholarship for the best Master's thesis in information security in 2017.

DISSERTATIONS

Dr. Sarfraz Iqbal, "Ensemble View on Designing Pedagogical Online Information Security Laboratories", February 2016.

Dr. Johan Wenngren, "Team Activities in Concept Development: Addressing Open-Ended Problems", February 2016.

RECENT PUBLICATIONS

Maciej Grzenda, Ali Ismail Awad, Janusz Furtak, and Jaroslaw Legierski (Eds.): *Advances in Networking Systems: Architectures, Security, and Applications*, Advances in Intelligent Systems and Computing Series, vol. 461, Springer International Publishing, January 2017.

Abd-Ellah, M. K., Awad, A. I., Khalaf, A. A. M., & Hamed, H. F. A. (2017). Design and implementation of a computer-aided diagnosis system for brain tumor classification. In 2016 28th International Conference on Microelectronics (ICM) (pp. 73–76). <https://doi.org/10.1109/ICM.2016.7847911>

Elragal, A. & Klischewski, R., (2017) "Theory-driven or Process-driven Prediction? Epistemological Challenges of Big Data Analytics". *Journal of Big Data*, 4:19, DOI 10.1186/s40537-017-0079-2.

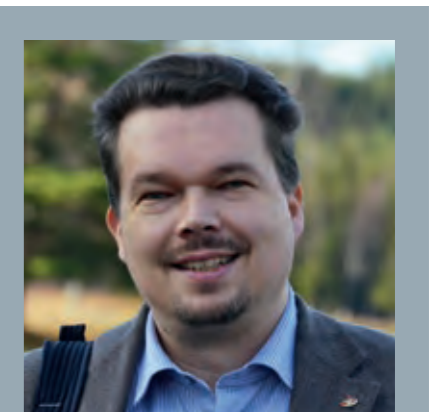
Awad, A.I., Hassaballah, M. (ed. 2016). *Image Feature Detectors and Descriptors: Foundations and Applications*. Studies in Computational Intelligence vol. 630. Springer.

Charif, B., Awad, A.I. (2016). Towards Smooth Organisational Adoption of Cloud Computing: A Customer-Provider Security Adaptation. *Computer Fraud & Security*, 2016(2), 7–15.

Edzén, S., Sein, M.K. (2016). Designing Theme-Based Tabletop Exercise for Identifying and Dealing with Coordination Problems in Emergencies. *International Journal of Emergency Management* 12(1), 22–40.

King, J., Awad, A.I. (2016). A Distributed Security Mechanism for Resource-Constrained IoT Devices. *Informatica*, 40(1), 133–143.

Padyab, A., Päiväranta, T., Ståhlbröst, A., Bergvall-Kåreborn, B. (2016). Facebook



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www.ltu.se/research/areas-of-excellence/enabling-ICT?l=en

Users Attitudes towards Secondary Use of Personal Information. 37th International Conference on Information Systems (ICIS), Dublin, Dec. 2016.

Sandlund, M; Lindgren, H; Pohl, P; Melander-Wikman, A; Bergvall-Kåreborn, B; Lundin Olsson, L (2016). Towards a mobile exercise application to prevent falls: A participatory design process. *International Journal of Child Health and Human Development*, 9 (3).

Wenngren, J., Ericson, Å, Parida, V. (2016). Improving Team Activities in the Concept Development Stages. *Journal of Promotion Management* 22(4), 496–510.





ABOUT THE INSTITUTION

The Institute of Information Management of the University of St. Gallen (IWI-HSG), founded in 1989, 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”, CC). 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, IWI-HSG’s contribution is on Business Innovation, focusing methods, reference models, and innovative prototypes.

As of fall 2017, Andrea Back, Walter Brenner, Reinhard Jung, Jan Marco Leimeister and Robert Winter as full professors are heading five research groups comprising eleven assistant professors or postdocs, twenty-eight research assistants, ten research affiliates, eight student assistants and twelve support staff members.

SELECTED RESEARCH PROJECTS

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

Business 2.0: The CC Business 2.0 focuses on the development of applicable methods for implementing and managing web 2.0 technologies, considering knowledge-intensive processes in the area of marketing, corporate communication, sales and services. Further information: <http://www.aback.iwi.unisg.ch/kompetenz/cc-business-20/>

Crowdsourcing: Crowdsourcing is a principle for organizing digital work. 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/>

Dynamics of Institutional Mechanisms in Enterprise-wide Information Systems Architecture: This research project, funded by the Swiss National Science Foundation, aims at a distinctive theorization of enterprise-wide IS architecture management that goes beyond the existing, merely centralized conceptualizations. Further information: <http://p3.snf.ch/project-165607>

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. 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>

Mobile Business: The CC Mobile Business is focused on the use, application, and management of mobile technologies in organizations. It aims at investigating the innovative design of work processes and corporate services with mobile technologies and Connected Things. Further information: <https://aback.iwi.unisg.ch/kompetenz/cc-mobile-business/>

Project Leadership: The CC Key focuses on improving the leadership of large IT projects. Latest development was a project assessment-tool that provides fast and objective evaluations as well as an automated analysis of multiple different problem areas. Further information: <https://key.iwi.unisg.ch>

Sourcing in Financial Services: The CC Sourcing (in cooperation with the University of Leipzig) develops concepts, instruments, and prototypes for managing financial networks. Research activities concentrate on customer- and service-oriented innovations in networked banks. Further information: <http://sourcing.iwi.unisg.ch>

Value Co-creation Language: This research project, funded by the Swiss National Science Foundation, seeks to develop a reference modelling language. The main focus is on facilitating the understanding of value co-creation across different disciplines. Further information: <http://p3.snf.ch/project-164204>

PUBLICATIONS

The following list is a very limited extract of the IWI-HSG publication list in 2017. A complete list of publications, as well as full texts of many papers, is available at: <http://www.iwi.unisg.ch/publikationen>.

Holler, M.; Uebernickel, F.; Brenner, W. (2017). Defining archetypes of e-collaboration for product development in the automotive industry. In: 25th European Conference on Information Systems, Guimarães, Portugal.

Bretschneider, U.; Leimeister, J. M. (2017). Not just an ego-trip: Exploring backers’ motivation for funding in incentive-based crowdfunding. In: Journal of Strategic Information Systems, forthcoming.

Bretschneider, U.; Hartmann, M.; Leimeister, J. M. (2017). Keep them alive! Design and evaluation of the “Community Fostering Reference Model”. In: Business & Information Systems Engineering, forthcoming.

Dremel, C.; Herterich, M.; Wulf, J.; Waizmann, J.-C.; Brenner, W. (2017). How AUDI AG established big data analytics in its digital transformation. In: MIS Quarterly Executive, 16(2), 81–100.

Jung, R.; Lehrer, C. (2017). Guidelines for education in business and information systems engineering at tertiary institutions. In: Business & Information Systems Engineering, 59(3), 189–203.

Mettler, T.; Sprenger, M.; Winter, R. (2017). Service robots in hospitals: New perspectives on niche evolution and technology affordances. In: European Journal of Information Systems, 26(5), 451–468.

Mirsch, T.; Lehrer, C.; Jung, R. (2017). Digital nudging: Altering user behavior in digital environments. In: 13th International Conference on Wirtschaftsinformatik, St. Gallen, Switzerland.

Silic, M.; Barlow, J. B.; Back, A. (2017). A new perspective on neutralization and deterrence: Predicting shadow IT usage. In: Information & Management, forthcoming.

Söllner, M.; Bitzer, P.; Janson, A.; Leimeister, J. M. (2017). Process is king: Evaluating the performance of technology-mediated learning in vocational software training. In: Journal of Information Technology, forthcoming.

Spagnoletti, P.; Za, S.; Winter, R.; Mettler, T. (2017). Exploring foundations for using simulations in IS research. In: Communications of the Association for Information Systems, forthcoming.



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EVENTS

In February 2017, IWI-HSG hosted the 13th International Conference on Wirtschaftsinformatik (www.wi2017.ch) in St. Gallen – the leading conference in the German-speaking scientific Information Systems community. Over 700 attendants from academia and industry, 110 scientific contributions, and 11 CIO/CEO presentations contributed to the successfulness of the conference.

In Mai 2017, the 45th edition of the St.Galler Anwenderforum took place, this time focusing on project governance. Other one- or two-day practitioner events, organized by IWI-HSG, are the Business Engineering Forum, the Swiss Industry 4.0 Conference, and the Mobile Business Forum.



UNIVERSITY OF TWENTE – CENTRE FOR TELEMATICS AND INFORMATION TECHNOLOGY

› University of Twente – Centre for Telematics and Information Technology www.utwente.nl/mb/iebis



ABOUT THE INSTITUTION

The University of Twente is where talent can best realise its full potential. Students and staff are the key. Together, 3,300 scientists and professionals carry out ground-breaking research, bring about socially relevant innovation, and provide inspiring teaching for more than 9,000 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 700 successful spin-off companies including well known E-businesses, such as Booking.com and Takeaway.com. The university's business park, Kennispark Twente, encourages and assists entrepreneurs to start new companies. But there is 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 Center for Telematics and ICT (CTIT) is the largest ICT research institute in the Netherlands and among the largest in Europe. CTIT is involved in more than 30 EU funded research projects and generates around 7

spin-off companies per year. CTIT recently co-founded ICT labs, a European EIT dedicated towards accelerating ICT innovations in business.

RESEARCH TOPICS

The research of CTIT is organised in centres that bundle efforts and closely align to topics addressed in the Dutch top-sector agenda and the European Horizon 2020. At CTIT, we conduct the ICT research that make the societies of today and tomorrow smart. Societies are important to us: we are concerned about the relevance of our research for society, we embed our solutions into societies and preferably in a way that it seems normal to you and that it feels as if it is supposed to be that way. Multidisciplinary research is in our veins. CTIT's research builds on two major research pillars:

- Cyber-Physical Systems
- Socio-Technical systems

Crossing these pillars, there are several themes on which research is being performed, such as:

- Digital security
- Intelligent logistics and mobility
- Monitoring and persuasive technologies (e.g., e-Health)
- Robotics
- Big data

Excellence is a key issue. The new 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.

CTIT's research is internationally oriented; there is a large participation within European projects. The research areas of CTIT are linked to scientific challenges that are either economically relevant (such as the Dutch Top Sectors, pillar 2 Industrial Leadership Horizon 2020), or socially relevant (e.g., pillar 3 of Horizon 2020 Societal Challenges).

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 www.ctit.nl.

CURRENT RESEARCH PROJECTS

CTIT 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: **Catelog** – Ebusiness architecture and fulfillment.

Social media content analysis – Data-driven service development. Integrating Internet and social media content reports with internal log data for service development decisions.

SynchromodalIT – this project aims at designing advanced algorithms and business-IT architectures to facilitate dynamic planning of logistics across various modalities. Hubways- development of a serious game to design and experience inter-organizational processes for a coordination hub for the flower industry.

AWARDS

The N.W.O funded several projects for PhD and postdoc positions in the IEBIS department in the area of complexity in networks and Internet of Things and Big Data in Logistics.

Prof. Jos van Hillegersberg was appointed as chairman of the research program committee of the Dutch Logistics Topsector.

EVENTS

A free open online course (MOOC) was developed on Supply Chain Innovation. It was run throughout 2016 and 2017. Over 10.000 students enrolled and participated in the discussions. The course was developed in a collaborative effort of several researchers of University and industry. The central theme was how to use ICT to innovate supply chains and achieve more sustainability. The course materials were closely linked to ongoing research projects. The course

will be evaluated and renewed to run again in 2017/2018, see <https://www.futurelearn.com/courses/supply-chain-innovation>.

PUBLICATIONS

Predictive analytics for truck arrival time estimation: a field study at a European distribution centre, *S van der Spoel, C Amrit, J van Hillegersberg*, International journal of production research 55 (17), 5062-5078.

An architectural perspective on service adoption: A platform design and the case of pluggable cross-border trade compliance in e-commerce, *F Aulkemeier, ME Iacob, J Van Hillegersberg*, Journal of Organizational Computing and Electronic Commerce.

Identifying child abuse through text mining and machine learning, *C Amrit, T Paauw, R Aly, M Lavric*, Expert Systems with Applications 88, 402–418.

Unlocking how start-ups create business value with mobile applications: Development of an App-enabled Business Innovation Cycle, *M Ehrenhard, F Wijnhoven, T van den Broek, MZ Stagno*, Technological forecasting and social change 115, 26–36.

A qualitative study of DevOps usage in practice, *FMA Erich, C Amrit, M Daneva*, Journal of Software: Evolution and Process 29 (6).

DISSERTATIONS

Pluggable services: a platform architecture for e-commerce, Aulkemeier, F. 12 Apr 2017 Enschede: Universiteit Twente.

Enhancing sustainable development in sub-Saharan Africa: new integrated sustainabil-



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Prof. Dr. Roel Wieringa

CTIT: <http://www.ctit.nl>
Scientific Director:
Prof. Dr. Maarten van Steen

ity mechanisms for securing substantial benefits of renewable energy projects, Ikejamba, E. C. X. 29 Jun 2017 Enschede.

Enterprise strategic alignment method: a cross-disciplinary capability-driven approach, *Aldea, A.* 6 Apr 2017 Enschede: Universiteit Twente.

All publications are available at: doc.utwente.nl



Universiteit Leiden

CURRENT RESEARCH PROJECTS

Leiden University is a university with a long history of excellent research. It belongs to the League of European Research Universities (LERU) and is regularly ranked in top 75 positions in international rankings.

The Leiden Institute of Advanced Computer Science (LIACS) is one of the institutes of the Faculty of Science. The institute is responsible for the research and education (Bachelor, Master, PhD) in Computer Science, in ICT in Business, Bioinformatics, and in Media Technology that are carried out at Leiden University. Research & education are closely intertwined and students of LIACS actively contribute to the research and get courses from top experts in their fields.

LIACS is furthermore one of the founding institutes of the Leiden Centre of Data Science (LCDS): a network of researchers from different scientific disciplines, who use innovative methods to deal with large amounts of data. Data Science, a quickly rising scientific discipline, forms the answer to this question.

RESEARCH TOPICS

Computers are becoming more and more powerful and are taking on more complex tasks. The Leiden Institute of Advanced Computer Science (LIACS) contributes to revolutionary scientific research and applies the latest inventions in the field, offering answers to today's questions of society.

Improve computer systems

With our research, we make computer systems faster and more efficient. Due to our improved algorithms and software, computers can compute faster and recognise patterns in large digital files at an earlier stage.

Applied and fundamental

We are keen to work on socially and industrially relevant questions. Behind the solutions for socially relevant questions, there are often deep theoretical discoveries, with a strong basis in statistics. In other words, we solve both fundamental and applied problems. This means that our research contributes to developments in every aspect of the field. It broadens our own conceptual world and that of other researchers.

The research at LIACS is categorized into seven research topics: Theory, Data Science, Machine Learning, Computer Systems, Bioinformatics, Media & Creativity, and Computer Vision.

CURRENT RESEARCH PROJECTS

Data science – that is the science of analyzing and managing big data – is a major research field of LIACS. Next, we highlight two projects in this direction:

SAPPAO: A systems approach in Airlines Operations

The SAPPAO project is an NWO-funded, four-year collaboration between LIACS, the GE India Technology Center and the Indian Institute of Technology Roorkee. The research is targeted towards developing methods for safer, faster, economical, environmentally sustainable and reliable global air travel. By analysing historical flight data and data on the associated disruptive events on the flight network, the SAPPAO- project aims to optimise the accuracy and reliability of predicting scheduled flight times, thereby potentially saving millions of Euros on better utilisation of airplanes, decreased fuel consumption, decreased CO₂ emissions, a decrease of ambient noise and better use of time for passengers and airports. In the project, the combination of network data, e.g., air connection networks, with time series plays, e.g., weather & aircraft condition, is used to improve schedules and delay management with respect to multiple criteria.

PROMIMOOC, a new system for controlling and optimizing industrial production processes

The Leiden Institute of Advanced Computer Science (LIACS) received a grant award from NWO for a joint proposal with Centrum Wiskunde & Informatica (CWI, Amsterdam), Tata Steel (Ijmuiden), BMW (Munich), and database company MonetDB. Within the NWO Data Science program 'challenging big data', LIACS is about to engage in a four-year project aimed at developing a new system for controlling and optimizing industrial production processes based on big data sets from sensors and online quality assessment.

For a comprehensive list of research projects by LIACS we refer to the webpage of the institute.

PUBLICATIONS

Karl Bringmann, Sergio Cabello, Michael Emmerich: Maximum Volume Subset Selection for Anchored Boxes, Symposium on Computational Geometry, LIPIcs-Leibniz International Proceedings in Informatics, 77, 2017

Wessel Kraaij: Data van waarde, Oratie uitgesproken door Prof.dr.ir. Wessel Kraaij bij de aanvaarding van het ambt van hoogleraar op het gebied van Applied Data Analytics aan de Universiteit Leiden op vrijdag 24 februari 2017, <http://hdl.handle.net/1887/516>

Jiaqi Zhao, Vitor Basto Fernandes, Licheng Jiao, Iryna Yevseyeva, Asep Maulana, Rui Li, Thomas Bäck, Ke Tang, Michael T. M. Emmerich: Multiobjective optimization of classifiers by means of 3D convex-hull-based evolutionary algorithms. Inf. Sci. 367–368: 80–104 (2016)

Zhiwei Yang, Jan-Paul van Osta, Barry D. Van Veen, Rick van Krevelen, Richard van Klaveren, Andries Stam, Joost N. Kok, Thomas Bäck, Michael Emmerich: Dynamic vehicle routing with time windows in theory and practice. Natural Computing 16(1): 119–134 (2017)



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SIMON KUZNETS KHARKIV NATIONAL UNIVERSITY OF ECONOMICS – INFORMATION SYSTEMS DEPARTMENT

› Simon Kuznets Kharkiv National University of Economics (KhNUE) – Information Systems Department ei.hneu.net



ABOUT THE INSTITUTION

Simon Kuznets Kharkiv National University of Economics (KhNUE) is the leading higher education institution of the 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 37 professors, 322 students on bachelor level, 111 on master level and 2 PhD students. The department is an active member of IT Ukraine Association and Kharkiv IT cluster. 15 professors are Microsoft certified specialists. Microsoft IT Academy works since 2009, IBM Academic Centre "Smarter Commerce" – since 2012.

The Master Double Diploma Programme MBA "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 200 students.

Simon Kuznets Kharkiv National University of Economics has about 7,769 students (including 1494 foreign students), 701 faculty members and offers training primarily structured around the new teaching architecture of the higher education. Having a considerable experience in training Ukrainian students, KhNUE influences HR, 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 behavior. The University established a flexible system of quality specialists preparation management, based on continuous monitoring 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 based 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**. Wider objective is to improve Master Programme 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 Systems domain.

ERASMUS+ CBHE FabLab – **Development of a network infrastructure for youth innovation entrepreneurship support on fablab platforms**. Wider objective is to develop environment that stimulates engineering creativity, entrepreneurial activities and fosters youth employability via HEIs-business-industry networking on fabrication laboratory platforms.

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

ERASMUS+ CBHE C3QA – **Promoting internationalization of research through establishment and operationalization of Cycle 3 Quality Assurance System in line with the European Integration Agenda**. Specific project objectives are: to establish an external and internal quality assurance system to promote quality of Cycle 3 programs and to promote internationalization of the Cycle 3 programs with joint efforts of the key stakeholders and cross-regional cooperation. IS department of KhNUE will work on the establishment of QA system for PhD programme in Information Systems.

Cryptographic means for information protection in banking systems. Developing differential game models of cyber-attacks processes in systems for bank information protection. Developing optimal strategies for information security in banking systems.

Modern simulation technology and designing of information systems and management objects. Computer imitational modeling of industrial and commercial systems.

CONFERENCES

IX Annual International Conference "IT Industry Development: Problems and Perspectives".

EVENTS

Prof. Zolotaryova served on the program committees of the following international conferences: ManComp 2017 – 2nd Workshop on Managing Complexity, BIR 2017 International Conference on Perspectives in Business Informatics Research, Euro-Symposium 2017 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 editorial boards of journals: – Bionics of intelligence, Information Systems and automation equipment, Herald of Chernivtsi University, Adaptive control systems, Problems of information technologies.

DISSERTATIONS

Bezsonov O. Evolving artificial feedforward neural networks: architecture, training, applications.

PUBLICATIONS

Plekhanova Ganna, Zolotaryova Iryna. Gender Equality in ICT Departments on the Example of Simon Kuznets Kharkiv National University of Economics // Book of Abstracts. 16th Annual STS Conference Graz 8th–9th May 2017.

Bezsonov O., Burdayev V., Rudenko O. Monograph "Information technology: problems and prospects", Kharkov: Publisher Rozhko SG, 2017.– 447 p.

Bezsonov O., Rudenko O. Multicriterial optimization of co-evolutionary neural network models. International scientific and technological confession "Computing Intellect (results, problems, perspectives)", Kyiv, 2017.

Bezsonov O., Rudenko O. Recognition of human emotional state through deep artificial neural networks. Bionics of Intellect, No. 1 (88), 2017.

Plokha O., Znakhur S. Using web-based management system for successful managing of the international projects. Systems of information processing – 2017.

Minukhin S., Information Technologies for Job Processing in Distributed Computing Environments. Systems of information processing – 2017.



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Ushakova I. Influence of computer business games on the formation of competences for future specialists. Systems of information processing – 2017.

Parfenov Y. Features of Java Development for MongoDB. Systems of information processing – 2017.



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 3,500 graduate (master's and PhD) students and 2,800 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 manager's 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 group 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 is ongoing research that relates to the open source sharing of designs for the 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 to be 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 from the National Science Foundation and other sources during the last four years.

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 contains 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 in 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 that development by creating technical infrastructure and working out organizational adaptations, while others try to elaborate 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 organization 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.

At the CEBPI latest research aims to understand the skills, positions, and organization structures of process management professionals in industries under different regulatory intensities. Additional research projects focus on the implications of digital technologies on organizational and technological infrastructures and the changing jobs of technology professionals in digitally-transformed organizations.

SELECTED PUBLICATIONS

Asakiewicz, C., and Stohr, T. "Building a Cognitive Application using Watson DeepQA," in *IT Professional* 19:4, pp. 36–44.

Cremer, G. G. "Network Structure and Market Risk in the European Equity Market," in *IEEE Systems Journal*, forthcoming.

Houlihan, P. and Cremer, G. G. "Risk Premium of Social Media Sentiment," in *The Journal of Investing* 26:3, pp. 21–38.



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Kyriakou, H., Nickerson, J. V., and Sabnis, G. "Knowledge Reuse for Customization: Metamodels in an Open Design Community for 3D Printing," in *MIS Quarterly* 41:1, pp. 315–332.

Lindberg, A. "Knowledge Integration in Online Communities," in *Academy of Management Proceedings*, 2017.

DISSERTATIONS/HABILITATIONS

Yue Han: Collective Exploration: Understanding Remixing Patterns in Online Communities

Pinar Ozturk: Dynamics of Online Community Collaborations



Jörg Becker and one of the new personal members after signing the official Certificate of Membership

PERSONAL MEMBERS

Since last year there is a novelty related to possibilities to become or be a member of the ERCIS network.

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.

This year we welcome three new personal members who signed their official Certificate of Membership during the ERCIS Annual Workshop in Leiden.

Welcome to Alessio, Daniel, and Stefano!



About Me:

My research interests comprise service science, business process management, information modelling, and the socio-technical design of information systems. A particular focus is designing information systems that enable service-oriented business models. Apart from conducting several projects for the German government, I am involved in the RISE_BPM project that networks many ERCIS members in the field of business process management. I am a member of the editorial boards for Business & Information Systems Engineering (BISE) and the Journal of Business Research (JBR), and a guest editor for the Information Systems Journal (ISJ). Currently, I am President of the Special Interest Group

on Services (SIGSVCS) in the Association for Information Systems. Here, my mission is to network service researchers from different backgrounds to shape the future agenda of the service science field.

SELECTED PUBLICATIONS

Barann, B.; Beverungen, D.; Müller, O. (2017). An open-data approach for quantifying the potential of taxi ridesharing. Decision Support Systems, 99 (July 2017), pp. 86–95.

Klör, B., Monhof, M., Beverungen, D., & Bräuer, S. (2017). Design and Evaluation of a Model-Driven Decision Support System for Repurposing Electric Vehicle Batteries. European Journal of Information Systems (EJIS), forthcoming.

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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, which has a curriculum on Digital Transformation.

My research activity studies the impact of ICT on communication and coordination of teams and organizations. Currently I am analysing 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).

In addition, I am also working on a study of the behavioural traits of the millennials generation, and their implications for sense making and decision making.

SELECTED PUBLICATIONS

Poponi, S., Braccini, A. M., & Ruggieri, A. (2017). Key Success Factors Positively Affecting Organizational Performance of Academic Spin-Offs. International Journal of Innovation and Technology Management, 14(5), 1750026-18

Braccini, A. M., Federici, T., & Sæbø, Ø. (2017). Tensions in Online Communities: The Case of a Mass Size eParticipation Initiative. In P. Parycek et al. (Eds.), International Conference on Electronic Participation (pp. 149–160). Springer.

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About Me:

I am an assistant professor (“junior professor”) in Digital Media in the Public Sector at the University of Bremen. In my research, I am concerned with how digitalisation changes the relationship between governments and citizens. For instance, I study how e-government is adopted both by government employees and by citizens and how both stakeholder groups can be encouraged to use the “e-“channel. In doing so, I find it especially interesting to combine my Information Systems background with insights from other disciplines such as communication and media science. My research has a strong international focus and I am happy to collaborate with researcher from various countries.

My teaching activities currently involve a student project whose participants develop a software platform for analysing the published opinion on issues of public concern on social media.

SELECTED PUBLICATIONS

Ogonek, N., & Hofmann, S. (2018) Governments’ Need for Digitization Skills. In: International Journal of Public Administration in the Digital Age (accepted for publication).

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Open-Minded

About Me:

I am head of the research group „Professional Communication in Electronic Media/ Social Media“ and principal investigator of the research training group “User-Centred Social Media” (DFG-Graduierten-kolleg) at University of Duisburg-Essen. My research is focused on the topics of “Enterprise Collaboration” and “Social Media Analytics”. Currently, we are working in several funded projects. Two selected projects are:

Funded by the BMBF (German Federal Ministry for Education and Research) we cooperate with the RWTH Aachen to investigate the habits of researchers concerning the management of their research data. The objective of the collaborative 2-years project titled “UNEKE” is the development of

criteria for the establishment of research data infrastructures at universities.

The DAAD funded research project “Social Media for Integrated Emergency Management” between ERCIS-partners University of Agder (Norway) and the University of Duisburg-Essen (Germany) aims at the development and improvement of concepts, methods and tools that can be used in the context of crisis situations. In particular, we address emergency situations that are caused by humans (e.g. rampages, terroristic attacks) and have major societal implications.

SELECTED PUBLICATIONS

Stieglitz, S., Bunker, D., Mirbabaie, M. & Ehnis, C. (2017). Sense-Making in Social Media During Extreme Events. Journal of Contingencies and Crisis Management (JCCM), DOI: 10.1111/1468-5973.12193.

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About Me:

Oliver Müller is an Associate Professor in the Business IT department at the IT University of Copenhagen. 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 the Association of Information Systems, European Journal of Information Systems, Management Information Systems Quarterly Executive, European Journal of Operational Research, Decision Support Systems, and various others.

SELECTED PUBLICATIONS

Müller, O., Simons, A., & Weinmann, M. (2017). Beyond crowd judgments: Data-driven estimation of market value in association football. European Journal of Operational Research (EJOR), 263 (2), pp 611–624, Available at: <https://doi.org/10.1016/j.ejor.2017.05.005>

Barann, B., Beverungen, D., & Müller, O. (2017). An open-data approach for quantifying the potential of taxi ridesharing. Decision Support Systems (DSS), Forthcoming, Available at: <https://doi.org/10.1016/j.dss.2017.05.008>

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About Me:

I’m currently adjunct professor in Informatics and Management of Information Systems at LUISS Guido Carli University. In 2017 I was visiting scholar at the EM Strasbourg Business School (France) and at the University of Agder (Norway). I’m the Secretary of the Italian chapter of AIS (<http://www.italis.org>) since 2008, and member of program committees and reviewer for national and international conferences and journals in domains of Information Systems and Organization Studies. My main research interest is the analysis of human behaviour in the digital ecosystem and the design of digital artefacts in order to foster new organizational learning process. In addition, I’m currently using SNA tools and Agent Based Simulation to analyse and

investigate the evolution of some specific social networks properties.

SELECTED PUBLICATIONS

Depaoli P. and Za S. (2017), SME e-business development: an interaction based approach, In Proceedings of the 25th European Conference on Information Systems (ECIS), Guimarães, Portugal, June 5–10, 2017

Carillo K., Scornavacca E., Za S. (2017), The role of media dependency in predicting continuance intention to use ubiquitous media systems, Information & Management, Vol 54(3) pp. 317–335

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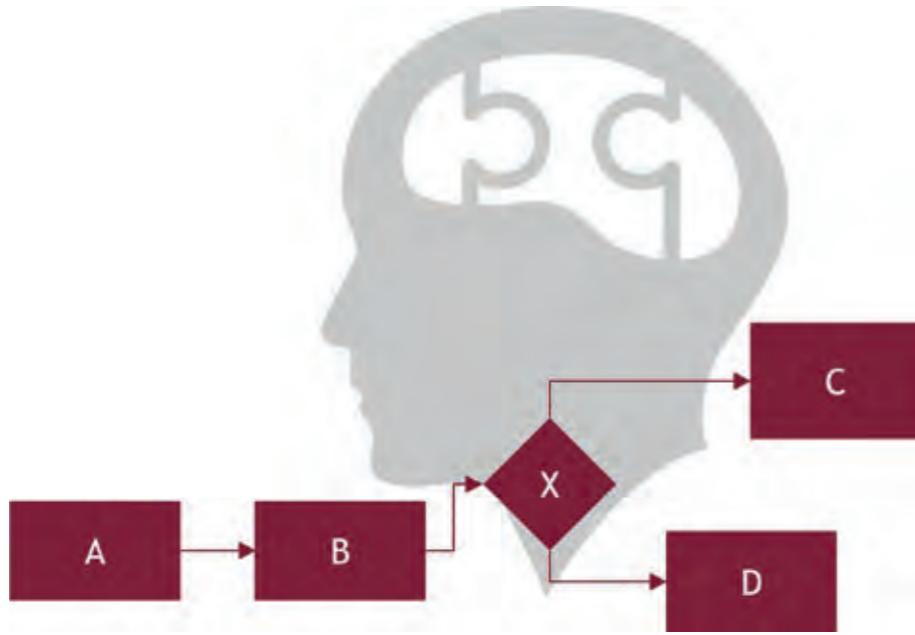
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CONCEPTUAL MODELING

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 diagrammatic 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, Benchmarking, 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 Diagrammed Model Query Language (DMQL). This year, we developed a new version of the latter including extended analysis capabilities.

Patterns for Query Languages: Patterns for query languages define model sections of interest that represent, for instance, compliance violations, process weaknesses, or errors. 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.

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 instance, to assure beneficial behavior and avoid unfavorable ones. We can use predictive process analytics, for instance, to support public traffic systems or tourist installations to optimize their operating rate or to avoid congestion, 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.

Standardization: In 2017, we completed the founded research project on EPC standardization that we work on together with our colleagues from the University of Osnabrück. The project is funded by the German Federal Ministry of Economic Affairs and Energy (BMWi). We are happy that we could publish our research results in renowned, high-ranked outlets (such as ISF and MISQ).

For more information visit:
www.conceptual-modeling.org

SELECTED PUBLICATIONS

Riehle, D. M., Höhenberger, S., Brunk, J., Delfmann, P., & Becker, J.: [εm] — Process Analysis using a Meta Modeling Tool. In: Proceedings of the Conceptual Modeling Demos (ER 2017), Valencia, Spain.

Jannaber, S., Riehle, D. M., Delfmann, P., & Thomas, O.: Help is on the Way — Providing User Support for EPC Modelling via a Systematic Procedure Model. In: Proceedings of the European Conference on Information Systems (ECIS 2017), Guimarães, Portugal.

Höhenberger, S., & Scholta, H.: Will Government Forms Ever be Consistent? Detecting Violations in Form Structures by Utilizing Graph Theory. In: Proceedings of the 25th European Conference on Information Systems (ECIS 2017), Guimarães, Portugal, pp. 737–752.

Riehle, D. M., Höhenberger, S., Cording, R., & Delfmann, P.: Live Query — Visualized Process Analysis. In: Proceedings of the 13th Internationale Tagung Wirtschaftsinformatik (WI 2017), St. Gallen, Schweiz, pp. 1295–1298.

Hermann, A., Scholta, H., Bräuer, S., & Becker, J.: Collaborative Business Process Management — A Literature-based Analysis of Methods for Supporting Model Understandability. In: Proceedings of the 13th Internationale Tagung Wirtschaftsinformatik (WI 2017), St.Gallen, Schweiz, pp. 286–300.

Becker, J.; Delfmann, P.; Dietrich, H.-A.; Eggert, M.; Steinhorst, M.: Model-based Business Process Compliance Checking in Financial Industries – Conceptualization, Implementation, and Evaluation. Information Systems Frontiers 18 (2016) 2, pp. 359–405.

Breuker, D.; Matzner, M.; Delfmann, P.; Becker, J.: Comprehensible Predictive Models for Business Processes. Management Information Systems Quarterly (MISQ) 40 (2016) 4, pp.1009–1034.

Höhenberger, S.; Riehle, D. M.; Delfmann, P.: From Legislation to Potential Compliance Violations in Business Processes – Simplicity Matters. In: Proceedings of the 24th European Conference on Information Systems (ECIS 2016). Istanbul, Turkey.



Winner of the ER Demos Tool Award: Riehle, D. M., Höhenberger, S., Brunk, J., Delfmann, P., & Becker, J. (2017). [εm] — Process Analysis using a Meta Modeling Tool. 36th International Conference on Conceptual Modeling (ER2017), Valencia, Spain.

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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 in this outstanding domain. C³M integrates a collaborating network of different practitioners and research groups from the crisis management and humanitarian logistics domain. C³M 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 FROM PROJECTS AND OTHER ACTIVITIES

The project DRIVER+ (DRiving InnoVation in Crisis Management for European Resilience, www.driver-project.eu), funded within the 7th Framework Programme of the European Commission, went through a restructuring phase and was relaunched in September 2017. Within the new phase of the project C³M has extended its role.



Next to contributing as a solution provider of different developments for the design, planning and simulation tools for disaster relief supply logistics, our team is now also responsible for some overarching objectives with regards to the DRIVER+ test bed and the portfolio of solutions. C³M became a member of the review board and is now involved in the development, application and evaluation of the test-bed methodology. Furthermore, C³M facilitates the review process of the Solution Selection Group, where crisis management practitioners evaluate potential solutions in a double blind review process. Due to its involvement in various scientific and practitioner crisis management networks C³M is also in charge of various dissemination activities, such as conferences or standardization activities.

One very exciting highlight in 2017 was the involvement of the C³M in the 14th International Conference on Information Systems

for Crisis Response and Management (IS-CRAM). Together with the German Aerospace Center (DLR) we have organized a workshop about “Transport and Logistics Management in Crisis Situations”. The aim of the workshop was to demonstrate and discuss different approaches for logistics and transportation issues within crisis management. The mix of presentations and an interactive session led to many constructive and insightful discussions. Next to this, Adam Widera from C³M co-chaired the track “Logistics and Supply Chain Management in Crisis Response” together with Prof. Jacques Lamothe from École des Mines d’Albi-Carmaux.

We are proud to have finally institutionalized our collaboration with the group of Prof. Marc Haselkorn at the Center for Collaborative Systems for Security, Safety, and Regional Resilience (CoSSar) at the University of Washington under a Memorandum of Understanding. Next to the plans of regular researcher exchanges, joint projects and other activities, we have successfully initiated joint lectures and co-supervised degree theses, also collaborating together with our practitioner networks, like the Red Cross Societies.

In the area of teaching, the C³M team is very happy to have integrated the Red Cross Disaster Response Simulation in the regular Bachelor and Master seminars on Quantitative Methods and Simulation in Humanitarian Logistics. The simulation is designed and supported by Prof. Garde-

mann and the Centre of Competence for Humanitarian Relief at the University of Applied Sciences Münster.

The year 2017 ended with an excellent event for the whole C³M team: we are very glad to have been asked to host the 4th edition of the International Conference on Information and Communication Technologies for Disaster Management (ICT-DM). It was a big honor to welcome authors, practitioners and solution providers from all over the globe: many different countries between Seattle in the US and Waikato in New Zealand participated in this event. We enjoyed every minute of being creative in planning and preparing a warm stay for our guests. To get a textual and visual insight on the overall program and the online available proceedings please have a look at our conference website: <http://ict-dm2017.ercis.org/>

SELECTED PUBLICATIONS

Widera, A., Konradt, C., Böhle, C., & Hellingrath, B. (2017) A Multi-method Simulation Environment for Humanitarian Supply Chains. Proceedings of the 4th International Conference on Information and Communication Technologies for Disaster Management.

Lechtenberg, S., Widera, A., & Hellingrath, B. (2017) Research Directions on Decision Support in Disaster Relief Logistics. Proceedings of the 4th International Conference on Information and Communication Technologies for Disaster Management.

Coletti, G. S., Mays, R. E., Widera, A. (2017) Bringing Technology and Humanitarian Values Together: A Framework to Design and Assess Humanitarian Information Systems. Proceedings of the 4th International Conference on Information and Communication Technologies for Disaster Management.

Lechtenberg, S., Widera, A., & Hellingrath, B. (2017) Assessing Vendor Managed Inventory (VMI) for Humanitarian Organizations. Proceedings of the 14th International Conference on Information Systems for Crisis Response and Management.

Siemen, C., Rocha, R., van den Berg, R. P., Hellingrath, B., Albuquerque, J. (2017) Collaboration among Humanitarian Relief Organizations and Volunteer Technical Communities: Identifying Research Opportunities and Challenges through a Systematic Literature Review. Proceedings of the 14th International Conference on Information Systems for Crisis Response and Management.

Widera, A., Lechtenberg, S., Gurczik, G., Bähr, S., & Hellingrath, B. (2017) Integrated Logistics and Transport Planning in Disaster Relief Operations. Proceedings of the 14th International Conference on Information Systems for Crisis Response and Management.

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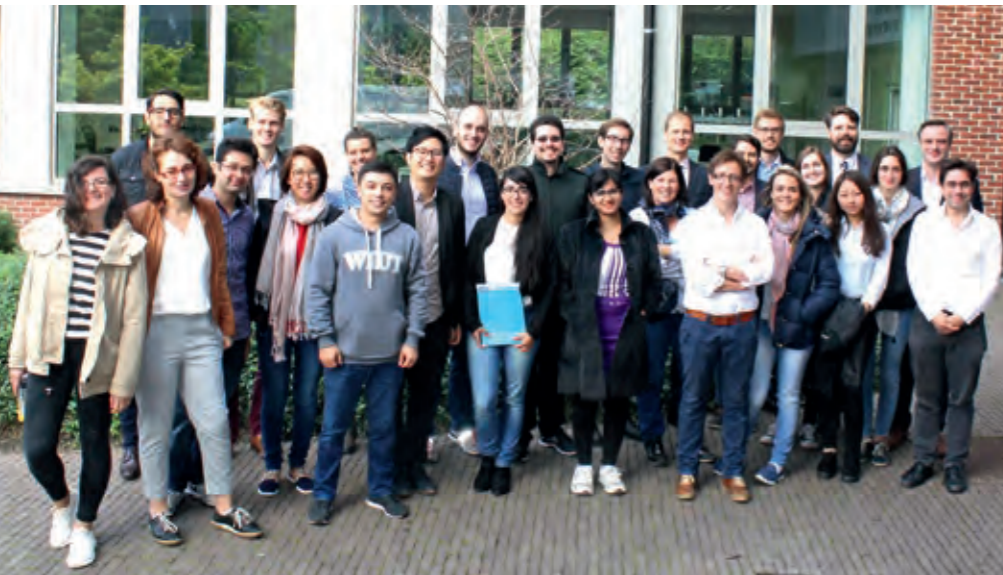
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16 pioneers with their supervisors at the kick-off in Leuven

COMPETENCE CENTER E-GOVERNMENT

The E-Government Competence Center, which was founded in 2004, has a long tradition in process management both within governments as well as between governments and other organizations. Our research focuses on how individuals use e-government technology.

Official start of the new Master's Programme Public Sector Innovation and E-Governance

With the beginning of the academic year 2017/18 the new Master's Programme Public Sector Innovation and E-Governance (PIONEER) has officially started. 16 students from 14 nations are now studying in the interdisciplinary field of E-Government, Public Management, Information Systems and Governance. After their first semester in Leuven, the students will come to Münster in spring 2018 and continue their studies in Tallinn from late summer 2018 on.

PIONEER is a 120 ECTS joint master programme organised by the KU Leuven, the University of Münster and Tallinn University of Technology, and co-financed by the European Union under the Erasmus+ programme. 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. Thus, the sector itself needs experts (1) who are able to translate technological expertise

into efficiency, effectiveness, performance and user needs, and (2) who are able to take into account the organisational, cultural, social and structural peculiarities of the public sector when implementing new technologies.

Joint Seminar eGov 4.0

In a cooperation between Münster and the Technical University of Munich (TUM), a joint master seminar on the topic of E-Government 4.0 took place during the summer term 2017. In five teams with members from both universities, the students created an innovative artefact for the public administration of the future. The seminar was set up in a very creative manner, in which not only new knowledge in the field of E-Government was gathered, but also creative and innovative artefacts in the form of prototypes or short films could be created. All students were invited to present their findings to an interested audience at the IT service provider Jinit[AG in Berlin.



Group photo of the joint seminar eGov 4.0



SIG IT for Public Administrations Meeting; From left to right: David Richter (new deputy), Michael Räckers (new spokesperson), Dagmar Lück-Schneider (outgoing spokesperson), Detlef Rätz (reelected deputy), Siegfried Kaiser (leaving deputy)

EVENTS

SIG IT for Public Administrations Meeting in Münster

In May 2017, the German Informatics Society (Gesellschaft für Informatik e.V. (GI)), SIG information technology for public administration and the National E-Government Competence Centre (NEGZ), supported by the IT Planning Council jointly organized a workshop on the topic of E-Competence in education and training. In total, 26 participants brainstormed, discussed ideas and exchanged best practices concerning e-competences, employer branding and learning- and knowledge platforms in the public sector. Based on the findings, a position paper was published.

During this meeting, Michael Räckers was elected as German Informatics Society (Gesellschaft für Informatik e.V. (GI)) spokesperson of the SIG information technology for public administration for the next three upcoming years.

Around 450 participants attended MEMO convention

This year's MEMO took place at the ERCIS headquarters in May 2017 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.

The project Federal Information Management (FIM) was successfully completed

After two prior projects in 2012/2013 and 2014/2015, the third project Federal Information Management (FIM) was conducted in 2016 and 2017. FIM's aim is to develop a method for the harmonization of service descriptions, processes and forms of government services. The ERCIS – together with the fortiss GmbH of the Technical University of Munich - was involved in the form-related part of the project to evaluate the previously developed concepts and prepare the application in the German governmental practice. The German IT Planning Council made the decision to establish and apply FIM permanently as an application of its own.

Collaboration of ERCIS researcher in Kristiansand

In August, Alessio Maria Braccini and Stefano Za from Rome and Sara Hofmann from Bremen visited Øystein Sæbø at the University of Agder and worked together on the topic of collaboration consumption in the public sector (see also p. 105).

Forthcoming event: E-Government track at MKWI 2018

Members of the E-Government Competence Center organize an E-Government at MKWI (multi conference Information Systems), which will take place in Lüneburg, Germany in March 2018.

PUBLICATIONS

Distel, B., & Becker, J. (2017). All Citizens Are the Same, Aren't They? – Developing an E-government User Typology. In Jansen, M., Axelsson, K., Glassey, O., Klievink,

B., Krimmer, R., Lindgren, I., Parycek, P., Scholl, H. J., & Trutnev, D. (Eds.), *Electronic Government. 16th IFIP WG 8.5 International Conference, EGOV 2017, St. Petersburg, Russia, September 4–7, 2017, Proceedings. Lecture Notes in Computer Science (LNCS): Vol. 10428.* Springer.

Hermann, A., Scholta, H., Bräuer, S., & Becker, J. (2017). Collaborative Business Process Management – A Literature-based Analysis of Methods for Supporting Model Understandability. In Proceedings of the 13. Internationale Tagung Wirtschaftsinformatik (WI 2017), St. Gallen, 286–300.

Höhenberger, S., & Scholta, H. (2017). Will Government Forms Ever be Consistent? Detecting Violations in Form Structures by Utilizing Graph Theory. In Proceedings of the European Conference on Information Systems (ECIS 2017), Guimarães, 737–752.

Scholta, H. (2017). The Same but Still Different: Forms in E-Government. In Proceedings of the 50th Hawaii International Conference on System Sciences (HICSS 2017), Waikoloa Village, Hawaii, 2559–2568.

Scholta, H., Mertens, W., Reeve, A., & Kowalkiewicz, M. (2017). From One-Stop-Shop to No-Stop-Shop: An E-Government Stage Model. In Proceedings of the European Conference on Information Systems (ECIS 2017), Guimarães, 918–934.

Ogonek, N., Räckers, M., & Becker, J. (2017). Kompetenzen erkennen, dokumentieren und bewahren für ein bedarfsgerechtes Wissensmanagement im demografischen Wandel. In Proceedings of the WM2017 – 9. Konferenz Professionelles Wissensmanagement, Karlsruhe, 174–185.

Ogonek, N. (2017). The Tale of e-Government: A Review of the Stories that Have Been Told So Far and What is Yet to Come. In Proceedings of the 50. Hawaii International Conference on System Sciences (HICSS-50), Big Island, Hawaii, USA, 2468–2477.

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Service Science at the European Research Center for Information Systems

› SERVICE SCIENCE COMPETENCE CENTER

The Service Science Competence Center is ERCIS' primary organizational unit for conducting research and industry projects in the area of service management and service engineering. The team currently consists of two professors and 13 research assistants.

The emergence and proliferation of the Service Economy has changed the way in which the creation of value is perceived throughout various industry sectors and societies. The selling of 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

Smart Market²



The digital era and the advent of omnichannel retailing transform consumers' shopping behavior in favor of digital channels and also raise their expectations towards the digital profile of high street retailers. By now, digitalization potentials in high street retailing are almost exclusively utilized by large retail chains, which leaves the number of small and medium-sized retailers to decline in many city centers. Smart Market² adapts successful strategies from online retailing to the physical realm of high streets to create interactive customer experiences. The research sets out to develop data-driven value-added services, as well as mobile apps that network high street retailers and high street customers. The three-year joint project includes Paderborn University, University of Duisburg Essen, LANCOM systems, Dialego AG and the University of Münster and was launched in March 2017.

More information:

<https://www.smartmarketsquare.de/>

Virtual Institute Smart Energy: Development of Digital Business Models Based on the Energy Demand Behavior of Households

The energy system's transformation from conventional resources to renewables poses a big challenge for many stakeholders. Smart energy technologies allow to meet

the challenges of increased flexibility, integration of decentralized energy systems, and customer requirements of individual products. The Virtual Institute Smart Energy serves as a central research platform to connect industry with research institutions from various academic backgrounds. As one part of the Virtual Institute, the research project "Development of Digital Business Models Based on the Energy Demand Behavior of Households" designs new business models to face the challenges of the energy system's transformation.

ACADEMIC ACTIVITIES

E-Mobility Projects successfully completed



crowdstrom final presentation @ Stadtwerke Münster

CrowdStrom and EOL-IS, our large e-mobility projects to support the diffusion of electric mobility were both successfully completed. Our results have been communicated comprehensively to academia and practice. In February, CrowdStrom has won the Best Prototype Award at the 13th international conference Wirtschaftsinformatik (WI2017) in St. Gallen, Switzerland. Our paper on "Recombinant Service Systems Engineering" was nominated for the Best Paper Award. Furthermore, EOL-IS will be

displayed in the context of the exhibition "Energiewenden-Wendezeiten" at the LVR-Industriemuseum Oberhausen, Germany.

DIGIVATION – Conference on Service Innovation through Digitization

As part of the research project DIGIVATION, the Competence Center co-organized a conference on service innovation through digitization. The conference took place on October 11th at the University of Passau. Beside presentations by researchers and practitioners, a panel discussion on Industry 4.0, crowd- and cloud-based business models, and the internet of things was conducted. The results of all 23 research projects in the funding program "Dienstleistungsinnovationen durch Digitalisierung" were presented to a general audience.

More information:

<https://www.digivation.de/>

Personal Changes

Martin Matzner, has been appointed as Full Professor at the Chair of Digital Industrial Service Systems at the Friedrich-Alexander Universität Erlangen-Nürnberg, Germany.

In December 2016, Daniel Beverungen took office as President of the Special Interest Group on Services (SIGSVC) in the Association for Information Systems (AIS). SIGSVC networks some 200 researchers of the Information Systems discipline around the globe. Like SIGSVC on Facebook!

Editorial jobs

Martin Matzner is part of the founding team of the new Journal of Service Management Research. The first issue was published in September 2017.

Daniel Beverungen is one of four guest editors for the Special Issue on Smart Service that will be published in the Information Systems Journal (ISJ). In addition, Daniel joined the editorial board of the Journal of Business Research (JBR), which also welcomes service science papers.

SELECTED PUBLICATIONS

Klör, B., Monhof, M., Beverungen, D., & Bräuer, S. (2017). Design and Evaluation of a Model-Driven Decision Support System for Repurposing Electric Vehicle Batteries. *European Journal of Information Systems (EJIS)*.

Barann, B.; Beverungen, D. & Müller, O. (2017). An open-data approach for quantifying the potential of taxi ridesharing. *Decision Support Systems*, 99 (July 2017), pp. 86–95.

Chasin, F., von Hoffen, M., Cramer, M., & Matzner, M. (2017). Peer-to-peer Sharing and Collaborative Consumption Platforms: A Taxonomy and a Reproducible Analysis. *Information Systems and e-Business Management*, 2017, 1–33.

Betzing, J. H., Beverungen, D., Becker, J., Matzner, M., Schmitz, G., Bartelheimer, C., Berendes, I., Braun, M., Gadeib, A., von Hoffen, M., & Schallenberg, C. (2017). Interactive Digital Customer Experience in High Street Retailing. *HMD Praxis der Wirtschaftsinformatik*, 54(5).

Betzing, J. H., von Hoffen, M., Plenter, F., Chasin, F., Matzner, M., & Becker, J. (2017). One Plug at a Time — Designing a Peer-to-Peer Sharing Service for Charging Electric Vehicles. In: *Proceedings of the 13. Internationale Tagung Wirtschaftsinformatik (WI2017)*, St. Gallen, Switzerland, 1275–1278.

Beverungen, D.; Lüttenberg, H. & Wolf, V. (2017). Recombinant Service System Engineering. In: *Proceedings of the 13. Internationale Tagung Wirtschaftsinformatik (WI2017)*, St. Gallen, Switzerland. (best paper nominee).

Beverungen, D., Müller, O., Matzner, M., Mendling, J., vom Brocke J. (in print). Conceptualizing Smart Service Systems. *Electronic Markets*.

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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.

ENGAGEMENT AND CREATIVITY WITH THE LEGO® SERIOUS PLAY® METHOD

ZIV, the central IT department of the University of Muenster, which serves about 50.000 customers (students, academic and non-academic staff), has launched a project to identify and develop end-user IT services by using traditional focus group sessions. We have joined the project with a view of complementing their endeavours by developing an alternative to the traditional focus group approach, which contains implicit assumptions that the users already have notion of their needs and requirements and just need to be nudged by the moderator to formulate the respective set of new features and functions.



As a result, we turned our attention to Lego® Serious Play® (LSP) that has become a popular method for overcoming the common deficiencies of organisational conversations, characterized by exclusion, domination of few individuals, lack of commitment and passion. Instead, it emphasizes on the ‘Lean Forward’ dispositions and genuine insights of participants. Conceptualized in relation to Jean Piaget’s theory that children use their hands-on experience of the world around them to build and develop their knowledge, LSP is presented as a facilitated thinking, communication and problem-solving technique for organizations, where participants build a metaphorical model from LEGO®.

We adapted the LSP and organised Lego workshops that included a challenge, individual time for building a model and sharing a story about the model. These workshops incorporated the idea that tactile experience is a key to “building” knowledge, and that the Lego models become boundary objects in the group conversations, and enablers for productive team cultures.

Our work with Lego rendered outcomes that suggested that more was at play:

- The building of the Lego models stimulated creativity and imagination, which resulted in valuable ideas.
- The design of the process allowed for a combination of individual “work” and sharing narratives in turn taking mode.
- The Lego models built by the participants become both material boundary objects, which facilitate conversations, and metaphors, which facilitate creative thinking and de- and re-contextualizing the task at hand.

Improving customer experience through digitalization



We participated in a project with ERCIS Advisory Board member CLAAS KGaA mbH. The project involved the development of a smart solution for improving the customer service process in case of machinery breakdown. We co-organised and man-

aged a student team that researched, proposed and developed a digitalized solution for making this process more efficient and reliable.

The team followed a Design Thinking approach in the first phase of the project. The participants engaged with selected customers of CLAAS across Germany in order to evaluate their current experiences and identify potential improvements. The second phase drew on these insights to conceptualize the process into two separate facets ‘as if’ and ‘improved to be’ processes. The team also developed a prototype of a customer self-service app, and triangulated their accomplishments by means of a survey.

The project was supported and co-organised by the Chair for practical computer science (Prof. Dr. Herbert Kuchen).

ONGOING RESEARCH INITIATIVES

- Organizational implications of the transformation of individual and corporate communication media repertoires
- Identification and Visualisation of Group Metrics in Enterprise Social Networks
- Enterprise Social Networks and the dialectics of collaborative advantage and collaborative overload
- Sustainable high performance work: physiological indicators and psychological mechanisms
- The ambivalent relation between IT and time management

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Karsten Kraume and Markus Heuchert at the ERCIS annual meeting in Leiden, Netherlands.

THE ERCIS OMNI-CHANNEL LAB – 2017 REVIEW

The long-term partnership between the European Research Center for Information Systems (ERCIS) and Arvato CRM Solutions (Arvato), a hugely successful collaboration of research and practice, continues to grow and develop.

The ERCIS Omni-Channel Lab – powered by Arvato – combines ERCIS’s established academic research network and teaching facilities with Arvato’s practical expertise of handling 1.7 million Omni-Channel interactions every day for many of the world’s best-known brands. This means that it is perfectly placed to investigate innovative solutions and concepts to meet the unique demands of Omni-Channel Customer Service.

The Lab’s research focuses on integrating, modelling and analyzing relevant customer data from many sources and across multiple channels with the goal of improving Customer Relationship Management (CRM) and, specifically, Customer Service.

RESEARCH

The Lab’s work in practice-oriented research in the area of CRM technology has led to several publications, which have been presented at international conferences during 2017.

For example, the Lab undertook an extensive evaluation of customer service in social media by analyzing millions of tweets and Facebook messages. The results were presented at the **Conference on Database Systems for Business, Technology, and Web (BTW ‘17)** in Stuttgart, Germany, as well as at this year’s ERCIS annual meeting in Leiden, Netherlands. In addition, members of the Lab conducted a comparison of stream clustering algorithms suited for real-time customer segmentation. The results were presented at the **Computing Frontiers Conference (CF ‘17)** in Siena, Italy.

The Lab also co-organized a **Workshop on Modeling and Management of Big Data (MoBiD ‘17)** as part of the **Conference on Conceptual Modelling (ER ‘17)** in Valencia, Spain. MoBiD ‘17 is an international forum for exchanging ideas on the latest and best proposals for modeling and managing Big Data. The Lab’s contributions to the workshop included two papers addressing the analysis of text streams as well as the challenges and huge potential of Big Data analytics for Omni-Channel CRM. The latter was also more thoroughly discussed in a respective ERCIS working paper.

Furthermore, members of the Lab attended the **Conference on Very Large Data Bases (VLDB ‘17)** in Munich, Germany; the **Conference on Evolutionary Multi-Criterion Opti-**

mization (EMO ‘17) in Münster, Germany; the **German-Brazilian Workshop on Information Systems in Logistics and Production Engineering** in Recife, Brazil; as well as the **Summer School on Data Management Techniques** in Dagstuhl, Germany. In addition, Karsten Kraume (CIO/CSO at Arvato CRM Solutions), was an invited speaker at the Dagstuhl seminar of the EU-funded **Business Process Management by Research and Innovation Staff Exchange (RISE_BPM)** program to discuss future directions of CRM.



Matthias Carnein at the CF‘17 in Siena, Italy.

PRACTICE

The Lab offers the opportunity to focus on actual industrial projects and challenges that are addressed by interdisciplinary teams. Participants from both ERCIS and Arvato work on CRM innovations on various projects. For example, the Lab has recently started a new collaboration with an established online-retailer to improve customer identification, data integration and customer segmentation in a real-world scenario.



Klaus Voormanns and Leschek Homann at the CeBIT in Hannover, Germany.

The Lab regularly participates in events to contribute to the wider community of IT, Analytics and Service Science. For in-

stance, the Omni-Channel Lab was present at this year’s CeBIT in Hannover, Germany, as part of the bigger presence of the state of North-Rhine Westphalia. In addition to selected research projects and results, the Lab also presented experiences from the collaboration between researchers and practitioners.

TEACHING

The Lab is closely involved in teaching and education of bachelor, master and PhD students. For this purpose, the Lab offers and supports various seminars and lectures. Some examples include:

- A project seminar on Customer Service aimed at analysing the customer service processes at Hilti and developed proposals to measure and improve reporting and real-time performance analysis for Customer Service Representatives (CSRs). It investigated how to maintain the operational excellence of a company in general while simultaneously improving its customer service.

- A project seminar on Tech-Enabled Omni-Channel CRM enabled students to develop an Omni-Channel user interface for CSRs. The component visualizes and integrates customer information from different sources such as Facebook, WhatsApp, E-Mail and traditional CRM data. The results provided important information for Arvato about how to integrate information across channels to achieve the most informative Omni-Channel (dashboard) solution.

The Lab was also involved in seminars on Infrastructure for Data-Driven Services; Statistical Methods in Retail; Applied Machine Learning; Stream Clustering; Omni-Channel ERP Software Selection; and Hate Mining, as well as lectures on Management Information Systems and Data Warehousing, Data Management, and Data Analytics. The Lab invites students to write their Master’s or Bachelor’s theses in the context of Omni-Channel CRM. In total, the Lab supervised seven theses with topics ranging from customer segmentation to the

modelling of Omni-Channel services and customer journeys.

PUBLICATIONS

Carnein, M., Assenmacher, D., & Trautmann, H. (2017). Stream Clustering of Chat Messages with Applications to Twitch Streams. In Proceedings of the 6th International Workshop on Modeling and Management of Big Data (MoBiD ‘17), Valencia, Spain.

Carnein, M., Heuchert, M., Homann, L., Trautmann, H., Vossen, G., Becker, J., & Kraume, K. (2017). Towards Efficient and Informative Omni-Channel Customer Relationship Management. In Proceedings of the 6th International Workshop on Modeling and Management of Big Data (MoBiD ‘17), Valencia, Spain.

Carnein, M., Assenmacher, D., & Trautmann, H. (2017). An Empirical Comparison of Stream Clustering Algorithms. In Proceedings of the ACM International Conference on Computing Frontiers (CF ‘17), Siena, Italy, 361–365.

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For more information about the ERCIS Omni-Channel Lab, please visit: <https://omni-channel.ercis.org/>

ERASMUS+ PROJECT MASTIS

The cross-regional project “Establishing modern master-level studies in Information Systems (MASTIS)” reviews and improves a Masters’s program in line with market needs especially tailored for the Ukraine and Montenegro. It is funded by the ERASMUS+ programme of the European Union and has a duration of 36 months.

Since 2016, several ERCIS partner institutions together with universities from the Ukraine and Montenegro work on the development of an Information Systems Master’s program that not only considers the relevant content but also innovative teaching methods and technologies. In April 2017, we had a project meeting in Münster, where we discussed the core competencies that graduates should have as well as core content that has to be part of the program. During the project meeting in September in Bled, the learning outcomes and detailed curricula for the respective core courses were discussed and developed in detail.



Project Consortium during the Project Meeting in Bled



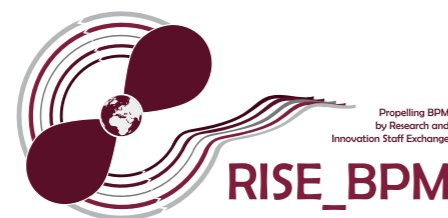
Project Consortium during the Project Meeting in Münster



RISE Consortium Meeting in Dagstuhl in September 2017

PROPELLING BUSINESS PROCESS MANAGEMENT BY RESEARCH AND INNOVATION STAFF EXCHANGE (RISE_BPM)

Since the year 2015 RISE_BPM is an ongoing project and the first favourably evaluated proposal within the Horizon 2020 EU funding programme, submitted by the University of Münster as coordinator in cooperation with ERCIS partners. It belongs to the specific funding program: Marie Skłodowska-Curie Actions: Research and Innovation Staff Exchange, which targets supporting individual researcher's research efforts. The project is aimed at networking world-leading research institutions and corporate innovators to develop new horizons for Business Process Management (BPM). The project consortium, besides the University of Münster as coordinator, includes academic partners from Australia (QUT), South Korea (UNIST), Brazil (UNIRIO), Austria (WU), Spain (USE), the Netherlands (TU/e), and Liechtenstein (UNI-LI) as well as practice partners from the Netherlands (CUPENYA) and Germany (PICTURE).



TESTIMONIALS

Since the "P" in Project Management is as much about the "People" as it is about the "Project", thus representing a crucial success factor, here are some testimonials of researchers who already have completed a secondment in the course of RISE_BPM, telling about their experiences:



Kate Revoredo from UNIRIO (Brazil), who went to Vienna:

"In January 2017, I did my second secondment in the context of RISE_BPM project. This time, I visited for a month the Institute for Information Business at Vienna University of Economics and Business (WU). The visit was motivated by a work the research groups of WU and UNIRIO started in 2016 during the secondments of WU researchers to UNIRIO. The purpose of the visit was to continue the collaboration within project mining. The idea was to analyze software development processes from the perspective of changes made to the files. We considered that the development process was supported by a Version Control System. Therefore structured (e.g. amount of changes) and unstructured (e.g. comments associated to commits) data were analyzed providing insights to the managers on how the development process was being conducted. The results obtained were presented at BPM 2017, last September. The collaboration continues and now we are investigating other techniques towards files dependency discovery. The secondment was not only good from the research perspective, it was also possible to enjoy the wonderful city of Vienna. I had the luck to be there during the Ball season. The whole city had over 400 balls and I had the opportunity to attend the WU ball dance. It was an unique and memorable experience. Moreover, for a Brazilian used to 18o°C in winter, it was great to explore winter in Vienna with its snow and frozen river. Walking on frozen Danube was fascinating. Participating in RISE_BPM has been a great experience. Beside, the wonderful moments visiting partners in secondments, it has been quite enriching to host different researchers, from different universities, with different backgrounds, and research themes, strengthening the collaboration network. I am looking forward to my next secondment in Nürnberg."



Thomas Grishold from WU Vienna (Austria), who went to Brisbane:

"I was a visiting researcher at the Queensland University of Technology (QUT) in Brisbane, Australia, from February to March 2017. It was my first stay in Australia and it is hard to put this amazing experience into words."

First and foremost, I could gain invaluable insights into my research on 'organizational unlearning'. My collaboration with Prof. Jan Recker provided me with the chance to explore the phenomenon from an IS-perspective. We used a recently developed simulation tool to investigate the consequences of unlearning in routines. We found that unlearning parts of sub-processes in routines can lead to unwanted and unexpected effects, which need to be taken into account when realizing unlearning in practice. Throughout my stay, I enjoyed the open and inspiring atmosphere that was provided by QUT, and it was great to get to know the variety of BPM and IS topics that are being pursued there."

Besides my research, I had the pleasure to make friends with wonderful people from all over the world (Canada, South Korea, Argentina, etc.). On weekends, my flatmates and I would rent a car and visit the beautiful places and beaches that were within reach. My favourite place was Byron Bay where we went surfing and enjoyed the famous East coast vibes."

Looking back, RISE_BPM was a fantastic experience where I could broaden my horizon both research and culture wise. The ideas I developed in Australia will have a lasting effect on my future research."



Jan Betzing from the University of Münster (Germany), who went to Liechtenstein:

"From May to July 2017, I visited the Institute of Information Systems at the University of Liechtenstein. During my visit, we deep dove into the novel EU General Data Protection Regulation that is effective May 2018, in order to understand its impact on business processes for personalized mobile services. We focused on mobile privacy decision making and collaboratively designed and conducted a study to assess, how transparency influences users in consenting to data collection and processing practices. We currently finalize our joint publication that will be submitted to a journal soon."

Especially in my situation as an early stage researcher, working with experienced colleagues with different backgrounds yielded valuable lessons that greatly improved my research skills."

The folks I met at Uni Liechtenstein are all great people that instantly integrated me into their team and made me feel welcome. Besides research, the Alpine region of Liechtenstein, Austria, and Switzerland provides picturesque landscapes and offers many opportunities for outdoor activities. I frequently went hiking, which often yielded fresh ideas and helped me to tackle problems from a different mindset. Working abroad also allowed to focus more on research and less on daily chores."

The RISE_BPM project gives participating researchers a premier opportunity to strengthen their ties to the research community and to generate knowledge on BPM that spans across country borders. I am thankful to be part of the project and thank my colleagues at Uni Liechtenstein in particular for making this visit a great experience in many ways."



RISE_BPM is funded by the European Union's Horizon 2020 research and innovation program.



Project Meeting in Venice 30 Nov-2 Dec 2016

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”) is an international project funded by the EU (European Union) Horizon 2020 Framework Programme. The project goal is to introduce structural changes in the participating Information Sciences and Technology (IST) research institutions to enhance gender equality, diversity, and work-family balance.

The project combines gender mainstreaming and positive actions at four main levels:

1. HR and management practices
2. Institutional communication
3. Teaching and services for (potential) students
4. Research design and delivery

The project consortium is formed by such ERCIS member institutions as the University of Münster (Münster, Germany), the University of Liechtenstein (Vaduz, Liechtenstein), 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 include Ca’ Foscari University of Venice (Venice, Italy) and the University of Modena and Reggio Emilia (Modena, Italy). The project is coordinated by the ViLabs company (Thessaloniki, Greece).

The project started in June 2016 and will last until May 2019. To date, the following activities have been 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, a co-design of tailored Gender Equality Plans (GEPs) for each participating research institution was performed. This process was facilitated by the CrowdEquality idea crowdsourcing platform ([https://](https://www.crowdequality.eu)

www.crowdequality.eu). The platform was developed by the team of eight Bachelor students studying Information Systems at the University of Münster as part of their project seminar.



Finally, the GEPs were discussed and approved by decision-makers at each research institution. Each GEP contains the detailed action plan for each of the selected initiatives aimed at addressing the identified challenges. The designed GEPs are currently being implemented and the progress is being continuously evaluated both internally and externally.

For further information please visit <http://equal-ist.eu>

START OF THE MASTER’S PROGRAMME PIONEER

The University of Tallinn (RND) offers jointly 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 programme has received funding from the European Commission and lasts from 1 September 2017 until 31 August 2019. The budget is approximately 2.4 Million Euros (mainly for student scholarships; the total amount of 170,000 Euros is for management costs of the project by three universities). The programme will allow to study in at least three different countries, starting in Leuven for the 1st semester, continuing in Münster for the 2nd semester and in Tallinn for the 3rd semester. 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 e-governance.

JOINT PUBLICATION OF LUISS AND IWI-HSG

The joint project on “Simulation studies in IS research” started in 2013 by LUISS and IWI-HSG resulted in the publication on Communication of the AIS of the paper “Exploring Foundations for Using Simulations in IS Research”. This was a joint endeavor of Paolo Spagnoletti and Stefano Za (LUISS Business School), Tobias Mettler (University of Lausanne), and Robert Winter (IWI-HSG).

ERASMUS+ PROJECT: TEXT MINING FOR CURRICULUM DESIGN FOR MULTIPLE INFORMATION SYSTEMS DISCIPLINES

Initiated by the University of Liechtenstein, the network was again successful in winning an Erasmus+ project called “Text Mining for Curriculum Design for Multiple Information Systems Disciplines”. Aside from the University of Liechtenstein, the consortium consists of the National University of Ireland Galway, and the University of Münster.

The goals of the project are to derive a novel semi-automatic, data driven curriculum design process (supported by software), and to develop two reference curricula, one in the domain of Data Science, and one in the area of Business Process Management. The data for the domains will be collected from online job ads, professional career platforms, and platforms like eduglopedia.org.

The project will last for two years and started in October 2017.



Co-funded by the Erasmus+ Programme of the European Union

COOPERATIVE TEACHING BETWEEN THE UNIVERSITY OF LIECHTENSTEIN AND SEVERAL ERCIS PARTNERS

As part of the University of Liechtenstein’s master’s course in Information Systems (with majors in Business Process Management and Data Science), Prof. Dr. Gottfried Vossen, Dr. Armin Stein, and Dr. Jens Lechtenböcker (all of the 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 and Prof. Dr. Stefan Seidel serve as Visiting Professors at our new ERCIS member, the National University of Ireland in Galway.

ERCIS MEMBERS VISITING UNIVERSITY OF AGDER

In August 2017, ERCIS personal members Alessio Maria Braccini, Stefano Za (both from Rome), and Sara Hofmann (from Bremen) visited the University of Agder, Norway, in order to explore collaboration opportunities and to jointly work on projects. Together with Øystein Sæbø, they have embarked on joint research projects in the area of e-government, social media, and collaborative consumption.

In addition, Alessio, Øystein, and Stefano organised a joint seminar for PhD students at the University of Agder.



From left to right: Alessio Maria Braccini, Stefano Za, Øystein Sæbø and Sara Hofmann

WORLD IT PROJECT

The University of Gdansk took part in the World IT Project (<http://worlditproject.com/>). It included 45 countries from all continents. The research topic was IT occupational culture (ITOC). The videoconferences on IS/IT research were given by Professors from Slovenia and Latvia.

HORIZON2020 PROJECT TROPICO

The University of Tallinn (RND) is a partner in Horizon2020 project “Transforming into Open, Innovative and Collaborative Governments”, acronym TROPICO. The project has altogether 12 partners, from ERCIS network including KU Leuven. Project’s duration is June 2017 until June 2021 (48 months) and budget allocated to RND 245,000 Euros. The TROPICO project aims to comparatively examine how public administrations are transformed to enhance collaboration in policy design and service delivery, advancing the participation of public, private and societal actors. It will analyse collaboration in and by governments, with a special emphasis on the use of information and communication technologies (ICT), and its consequences. This multidisciplinary project will follow a truly comparative approach, examining ten countries representing the five administrative traditions in Europe: Nordic (Norway, Denmark), Central and Eastern European (Estonia, Hungary), Continental (Netherlands, Germany), Napoleonic (France, Spain; Belgium (mixed)), and Anglo-Saxon (United Kingdom).

JOINT RESEARCH WITH THE LIACS, UNIVERSITY OF LEIDEN

Multiobjective Optimization aims at optimizing several quality criteria of a problem or process simultaneously based on finding the best levels of process influencing factors. One research focus is on integrating experts’ or decision makers’ preferences prior to or interactively during optimization in order to focus on practically relevant solutions, e.g. resulting in decision support systems.

Moreover, problem characteristics extremely influence the hardness of the optimization problem. Especially, multimodality of the multiobjective landscape, is a severe challenge in that optimization algorithms might get stuck in only locally optimal solutions. A thorough theoretical analysis of the multimodality issue as well as the extraction of numerical features which will be helpful for efficient automated algorithm selection on unseen problems are investigated.

The development of effective automated algorithm selection and configuration techniques has been one of the major success stories in the area of empirical algorithmics in recent years. Building on a wide range of algorithmic approaches for problems such as the Traveling Salesperson Problem (TSP), these methods permit the selection of appropriate algorithms based on efficiently computable characteristics of a problem instance to be solved (algorithm selection) and the automatic determination of performance optimising parameter settings (algorithm configuration). In both cases, statistical models that enable performance predictions for previously unseen problem instances or parameter settings play a key enabling role.

Heike Trautmann (WWU Münster) and Holger Hoos (LIACS, Leiden) currently organize a special issue on “Algorithm Selection and Configuration in Evolutionary Computation” of the Evolutionary Computation Journal together with Frank Neumann (University of Adelaide, Australia).

Moreover, joint research is conducted in the field of Big Data and Data Science, specifically in the context of the Leiden Center of Data Science.

References to joint papers 2017:

Kerschke, P., Kotthoff, L., Bossek, J., Hoos, H. H., & Trautmann, H. (2017). Leveraging TSP Solver Complementarity through Machine Learning. Evolutionary Computation Journal, doi: 10.1162/evco_a_00215

Kerschke, P., Wang, H., Preuss, M., Grimme, C., Deutz, A.H., Trautmann, H., Emmerich, M.T.M. (2017). Search Dynamics on Multimodal Multi-Objective Problems, Evolutionary Computation Journal, accepted.

Li, L., Yevseyeva, I., Basto-Fernandes, V., Trautmann, H., Jing, N., & Emmerich, M. (2017). Building and Using an Ontology of Preference-Based Multiobjective Evolutionary Algorithms. In Trautmann, H., Rudolph, G., Klamroth, K., Schütze, O., Wiecek, M., Jin, Y., & Grimme, C. (Eds.), Evolutionary Multi-Criterion Optimization: 9th International Conference, Proceedings (pp. 406–421)

Li, L., Wang, Y., Trautmann, H., Jing, N. & Emmerich, M. (2017). Multiobjective evolutionary algorithms based on target region preferences, Swarm and Evolutionary Computation Journal, under review

Li, L., Yevseyeva, I., Basto-Fernandes, V., Trautmann, H., Jing, N. & Emmerich, M. (2017). An Ontology of Preference-Based Multi-Objective Metaheuristics, Evolutionary Computation Journal, under review

van Engelen, J., van Lier, J.J., Takes, F.W. & Trautmann, H. (2017). Crowd flow analysis based on indoor WiFi positioning data, Data Mining and Knowledge Discovery, under review

RESEARCH VISITS

WITHIN THE NETWORK



› Prof. Dr. Jos van Hillegersberg from the University of Twente visited ERCIS partner Stevens Institute of Technology in New York. He met with Prof. Dr. Michael Zur Muehlen, associate dean of graduate programs at Stevens. Goal of the visit was to discuss research collaboration and staff and student exchanges.

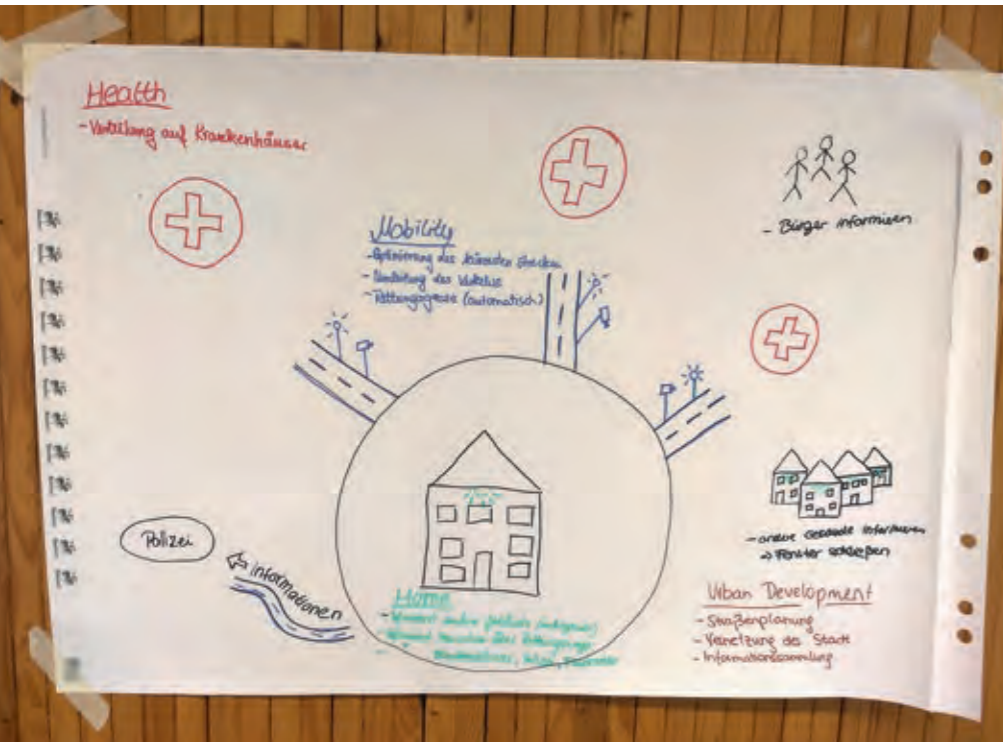
› Ongoing collaboration and visits of Dr. Jonas Hedman of Copenhagen Business School at the University of Twente resulted in a joint publication on Sports Analytics that will be presented at ICIS 2017 in Seoul, Korea.

› Professor Robert Krimmer gave a talk during the Handelsinformationssystem-Tagung, 15–16 May 2017, at the University of Münster. The Republic of Estonia is creating a borderless digital society for global citizens and it is the first country to offer e-Residency, a state issued digital identity that empowers entrepreneurs around the world to set up and run a location-independent business. Already more than 20,000 people from 138 countries have applied for e-Residency. The talk focused on e-residency and location-independent business – what new opportunities the e-Residency has opened up. E-Residents can, for example, establish a trusted EU company online in one day, start and manage a company 100% online from anywhere in the world, sign and authenticate documents anywhere, access international payment service providers, such as PayPal, declare Estonian taxes online, and more.

› LUISS University and the University of Agder have continued their strong collaboration activities also for the last year, resulting in three researchers from the LUISS IS group visiting UiA, while researchers from UiA have visited LUISS many times during the year. Several journal articles and conference papers have been co-authored with members from these two partners, and more papers and projects are currently being developed.



› Members of the University of Liechtenstein visited numerous ERCIS partners. Dr. Markus Weinmann visited the Queensland University of Technology in Brisbane, Australia, for one semester, and Dr. Bernd Schenk visited Prof. Dr. Jan Mendling and his team at WU Vienna in August 2017. In turn, researchers from other ERCIS partner universities (WU Vienna, WWU Münster, UNIST Republic of Korea) visited the University of Liechtenstein.



SPECIALISATION MODULE “SMART CITIES”

Following the ERCIS Virtual Seminar of winter term 2016/2017, where students from various partner institutions developed a curriculum and lectures for a course about “Smart Cities”, the University of Münster brought this draft into action. During summer term, three lecturers of the headquarters used a good share of the students’ deliverables to offer a specialisation module (seminar, lecture, and exam) to eight undergraduate Information Systems students. According to the evaluation, the module was a success, being rated 1.3 by the students (with 1.0 being best). The module will most likely become a regular module being offered to Münster students. The lectures were initially developed by students from the Universities of Bremen, Twente, and Münster.

PROJECT SEMINAR WITH HILTI: CUSTOMER SERVICE AT HILTI

This project seminar investigates how to measure and manage customer experience in a global contact center. The goal of the respective technology platform is to set high standards to achieve aspirations towards quality, efficiency and reliability. The project seminar is being supervised by the chair of Prof. Heike Trautmann.

MASTER PROJECT SEMINAR: CLAAS SELF SERVICE APP

During summer term 2017, six students participated in a project seminar with the ERCIS Advisory Board member CLAAS. From March to September, the students developed a concept for improving the customer service process in case of machinery breakdown. Specifically, they tried to answer the question how the customer could be involved to speed up the process.

First, grounded in a Design Thinking approach, the students interviewed selected customers across Germany to analyze how the service of CLAAS is currently evaluated. Based on these interviews, a concept consisting of as-is and improved to-be processes as well as a prototype of a customer-self-service app were developed. In a last step, the concept was also tested by means of a survey. On Wednesday, 23rd of August, the students presented their convincing results at the CLAAS Headquarters in Harsewinkel, Germany, in front of the management of CLAAS and the supervisors from University, supported by Prof. Dr. Herbert Kuchen and Dr. Stefan Schellhammer. The project seminar was a joint effort of the two chairs of Interorganizational systems (Prof. Dr. Stefan Klein) and the chair for practical computer science (Prof. Dr. Herbert Kuchen).

GUEST LECTURES AND INVITED TALKS

Professors Marite Kirikova, University of Riga and Joze Zupancic, University of Maribor, gave a series of videoconferences for the students of new specialization Informatic Applications in Business at the University of Gdansk.



EXECUTIVE CERTIFICATE IN BUSINESS PROCESS MANAGEMENT

As a result of the BPM Online Erasmus+ project, Jörg Becker (University of Münster), Jan vom Brocke (University of Liechtenstein), Jan Mendling (Wirtschaftsuniversität Wien), Hajo Reijers (VU Amsterdam), and Matthias Trier (Copenhagen Business School) initiated an online (but personal!) Executive Certificate in Business Process Management (BPM) programme. During this one year course, a maximum of 20 participants will learn about the concepts of BPM Essentials, BPM Models and Methods, BPM Technologies, BPM Actors, Networks, and Innovativeness, and BPM Applications. The course will be accompanied by a case study; it starts and ends with a BPM Executive’s Round Table. Registration is open until January 15th, 2018. The programme will start in February 2018.

Read more here:
<http://www.bpm-executive.com/>



PH.D. SEMINAR AT FLUMSERBERG AND KLOSTERS

In February 2016 and 2017, Prof. Dr. Stefan Seidel (University of Liechtenstein), Prof. Dr. Nicholas Berente (University of Georgia), Prof. Dr. Roland Holten (Goethe University Frankfurt), Prof. Dr. Jan Mendling (WU Vienna), and Prof. Dr. Christoph Rosenkranz (University of Cologne) conducted Ph.D. seminars at Flumserberg and Klosters in Switzerland on the topic of research quality in Information Systems. About fifteen Ph.D. students from a variety of universities presented their research propositions, discussed current topics in the field of Information Systems, and enjoyed winter sports and tours of the region. The seminar was carried out for the fourth time in 2017 and has become a prestigious and popular seminar on Information Systems in Europe.

JOINT PHD COURSE OFFER

In 2017, a course on design science research has been launched by Jan vom Brocke (University of Liechtenstein) and Robert Winter (IWI-HSG). The course has been offered for the doctoral program pro dok of the VHB association (<http://vhbonline.org/veranstaltungen/prodok/kurse-2017/ds17/>).



Award winners and jury of ERCIS Launch Pad 2016

ERCIS Launch Pad

ERCIS LAUNCH PAD

ERCIS Launch Pad – the annual IT business ideas competition of ERCIS – will be held for the 10th time on 6th December 2017. 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 10th Launch Pad can win cash and attractive prizes.

For the 9th edition, which took place in 2016, the number of submissions remained at the all-time high of the previous year, and six finalists were invited to pitch their ideas to the jury. Eventually, ProLeap won the award for **best overall concept** (sponsored by Fiducia & GAD IT AG) for their platform for the analysis, optimization, and transformation of COBOL legacy applications; feelSpace convinced with their vibrotactile navigation belt and won the **innovation** award (sponsored by noventum consulting GmbH), the regional **medium-sized business** award (sponsored by Wirtschaftsclub NordWestfalen), as well the **audience** award; innoMMT presented a solution for mobile breath diagnostics and won the award for **best scientific grounding** (sponsored by ERCIS), while DailyDress as personalized recommender for the perfect outfit won the **best commercial potential** award (sponsored by NRW Bank) and the PayPal start-up support.



ERCIS@ICIS AND ERCIS@ECIS

Already a tradition, ERCIS members met at the International Conference on Information Systems (ICIS) in Dublin, Ireland, on December 12th. More than 35 members of the network attended the meeting on a boat on the river Liffey, near to the Convention Center Dublin, the venue of the ICIS conference 2016.

As ECIS 2017 took place at our network partner, the University of Minho in Guimarães, Portugal, we had again, after ECIS in Münster, an ERCIS@ECIS@ERCIS meeting. We met at Papa Boa, a traditional restaurant in the heart of Guimarães, where we have already been in 2015 when we had our ERCIS Annual Workshop at the University of Minho.

With so many members regularly attending the meetings, they are a great opportunity to have a chat with fellow colleagues.



ERCIS ADVISORY BOARD MEETING 2017 IN MÜNSTER

Since the decision was made to have an Advisory Board Meeting every 9 months, we had one meeting this year, on May the 22nd.

Researchers from the ERCIS headquarters and representatives of the member companies arvato Bertelsmann, Claas, Informationsfabrik, IQ Optimize Software AG, Lidl, Vodafone and zeb as well as invited guests from Convotis and AFSMI (Association for Service Management International) met in Münster's palace, which houses the university, for inspiring talks and discussions on various topics.

In the beginning of the meeting, the academic director Jörg Becker gave a short introduction and Armin Stein, the managing director, presented a recap on the ERCIS activities in 2016. In the first session of presentations Jan Stockhinger from the University of Münster, presented the Research Group on Strategic Information Management. Followed by the presentations of the new advisory board members Informationsfabrik, Lidl and Vodafone.

After lunch Steffen Höhenberger and Dennis Riehle, both from the University of Münster, presented the project "Hateminig" which deals with the questions how to identify hate speech and if analytics can curtail hate speech in the internet.

After that Jan Betzing, also belonging to the University of Münster, introduced the ERCIS Competence Center "Service Science" and the projects they are working on, for example "smartmarket2" which started in the first quarter of 2017 and deals with the challenges of digitalization for SME retailers.

In the afternoon Alexander Martin, head of enterprise CRM of Vodafone, gave the impetus for a discussion about the necessity of compulsory internships for students of business informatics. How long should an internship last at least and is this compatible with the study regulations, were the questions dominating the discussion. The meeting closed with a discussion about the faculty's Mission Statement in which Professor Klein, one of the ERCIS directors, asked the advisory board members for their opinion on the statement.

All in all, the ERCIS Advisory Board Meeting 2017 was a further step towards an active network and a fruitful dialogue between research and practice. Like every time, the day passed by too soon and we were left with a lot of interesting ideas for future collaborations. We are looking forward to our next meeting in January 2018!

CTIT SYMPOSIUM: "INTERNET OF THINGS IS READY. WHAT ABOUT US?"

On Tuesday 14 November 2017 the CTIT symposium: "Internet of Things is ready. What about us?" was held at the University of Twente. For years, the future has been described by examples of fridges talking to your milk cartons, cars driving autonomously and production lines delivering goods to your door, without any humans involved. Today, Amazon can deliver packets by drones, Tesla drives your car for you and your fridge is aware of its contents. Welcome to the future: It's the Internet of Things, and it's here to stay! The technology behind Internet of Things (IoT) has reached maturity, but how about society? Are businesses ready for these new developments? How about the ethical and legal questions that arise from this new technology. But what about you? Does it scare you, do you think it won't affect you, or do you see endless new possibilities? This symposium offers a program covering the Internet of Things in all sizes and shapes, discussed from various angles by experts, scientists and end users.



WUST Events ICCCI 2017

9TH INTERNATIONAL CONFERENCE ON COMPUTATIONAL COLLECTIVE INTELLIGENCE

The International Conference on Computational Collective Intelligence (ICCCI 2017) took place in Nicosia, Cyprus, September 27–29, 2017. The conference was co-organized by the University of Cyprus and the Wrocław University of Science and Technology, under the patronage of the IEEE SMC Technical Committee on Computational Collective Intelligence.

In response to the call for papers, 240 papers from 39 countries were submitted to the conference and 114 best papers were selected for publication in two volumes of LNCS/LNAI (Vol. 10448 and 10449).

Prof. Yannis Manolopoulos from the Aristotle University of Thessaloniki, Prof. Andreas Nürnberger from the Otto-von-Guericke University Magdeburg, Prof. Constantinos S. Pattichis from the University of Cyprus, and Prof. Sławomir Zadrozny from the Systems Research Institute of the Polish Academy of Sciences delivered keynote speeches.

ACIDS 2017 AT THE JAPAN ADVANCED INSTITUTE OF SCIENCE AND TECHNOLOGY

The ninth Asian Conference on Intelligent Information and Database Systems (ACIDS 2017) took place in Kanazawa, Japan, April 3–5, 2017. Wrocław University of Science and Technology and Japan Advanced Institute of Science and Technology jointly organized the event. As in the previous year, Dr. Jaroslaw Gowin, the Deputy Prime Minister of the Republic of Poland and Minister of Science and Higher Education granted the honorary patronage over the conference.

More than 400 submissions came from 42 countries, but only 154 papers with the highest quality were selected for publication in the two volumes of LNCS/LNAI (Vol. 10191 and 10192). Moreover, 40 additional papers were published in the form of chapters of the scientific monograph issued in *Studies in Computational Intelligence* (vol. 642) by Springer Verlag.

Keynote speeches were delivered by Prof. Tu-Bao Ho, Prof. Bernhard Pfahringer, Prof. Edward Szczerbicki, and Prof. Hideyuki Takagi.

THIRD INTERNATIONAL JOINT CONFERENCE ON ELECTRONIC VOTING

This conference is one of the leading international events for e-voting experts from all over the world. In 2016 the two previously bi-annually held conferences, EVOTE and VoteID, were merged into the annual E-VOTE-ID conference. The third joint conference will take place in October 2018, 2–5th in Bregenz, Australia. One of its major objectives is to provide a forum for interdisciplinary and open discussion of all issues relating to electronic voting. Cumulatively, since 2004 some 1,000 experts from all over the world have attended this conference to discuss electronic voting and related topics.

The conference proceedings will be available at the time of the conference. Full papers accepted for the tracks on security, usability, and technical issues, respective administrative, legal, political, and social issues will be published in Springer LNCS. All other accepted publications, including full papers in the election experience track, accepted abstracts in any of the tracks, and from the submissions in the PhD colloquium will be published in proceedings with TUT press. The submission deadline is May 15th, 2018.

www.e-vote-id.org



Winter School_2017

SIXTH LIECHTENSTEIN WINTER SCHOOL ON BUSINESS PROCESS MANAGEMENT AND DATA SCIENCE

For the sixth time, the University of Liechtenstein organized the Winter School for Business Process Management and Data Science. Thirty Bachelor's degree students, including students from the University of Münster, learned about BPM and data science from case studies and from input sessions led by lecturers from the University of Liechtenstein and the University of Münster. Students also visited Hilti AG and Swarovski AG and enjoyed sleigh-riding in the mountains of Liechtenstein.



Studytrip_Vienna_2017

STUDY TRIP TO VIENNA 2017

In April 2017, students in the Master's program in Information Systems from the University of Liechtenstein travelled to Vienna, where lectures by Prof. Dr. Jan Mendling at the University of Economics and Business (WU), company visits, and cultural tours were on the agenda. For students of more than fifteen nationalities, the excursion was a unique experience to get to know the Austrian capital and the newly opened campus of WU Vienna to gain important competencies they can use in their studies.



BPM Round Table

BPM ROUNDTABLE

The 12th BPM Roundtable on "Digital Innovation and Transformation in Practice" took place on October 12, 2017, at the University of Liechtenstein. With the participation of Prof. Dr. Jan Mendling (WU Vienna) and a presentation by the Lufthansa Technik Group, the book *BPM Cases* was officially launched.

WIRTSCHAFTSINFORMATIK 2017

In February 2017, IWI-HSG hosted the 13th International Conference on Wirtschaftsinformatik (www.wi2017.ch) in St. Gallen – the leading conference in the German-speaking scientific Information Systems community. Over 700 attendants from academia and industry, 110 scientific contributions, and 11 CIO/CEO presentations contributed to the success of the conference.

arvato

BERTELSMANN



OUR COMPANY

We are Arvato CRM Solutions. We design, deliver and differentiate customer service on behalf of some of the world's most respected brands.

Customer service is about technology, because constantly evolving technology is driving up customer expectations and has the power to simplify service delivery for our clients too. So naturally we support their customers and their need for competitive advantage.

Customer service demands experience, because service is one of our client's most valuable brand assets and becoming ever more complex to deliver. Differentiated by our experience, we are global, have know-how across the customer journey and, backed by Bertelsmann, we take a long-term perspective. So we're our clients' partner for the duration.

Above all, customer service is about people, because service is a human thing even if it's delivered by a robot. And it's people that apply technology, draw on experience, and add value. Our enterprising spirit means we're defined by our people, who deliver effectively in the face of the unpredictable, shape the future, drive global consistency as well as individual nuance.

Driven by technology and differentiated by experience, we ensure our clients perform. But powered by people we also help them to transform.

OUR CORE AREAS OF INTEREST/RESEARCH AND INNOVATION

- Customer Experience Management (CX)
- Omni-channel Customer Relationship Management
- Big Data and advanced CRM Analytics
- Service Delivery Automation (RPA, AI etc.)

WORKING FOR ARVATO

Customer service is about people. It's our people that apply technology, draw on experience, and add value for our clients and their customers. Whether you're an experienced professional or starting out on your career, we can offer you the opportunities, support and room to grow that you'd expect from a global leader. To find out more about the opportunities we can offer, please go to the careers pages of our website. <https://crm.arvato.com/en/career.html>

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P +49 5241 80-1460

<https://crm.arvato.com/en.html>

THE OMNI-CHANNEL LAB – POWERED BY ARVATO

The Omni-Channel Lab combines ERCIS's established academic research network and teaching facilities with Arvato's practical expertise of handling 1.7 million Omni-Channel interactions every day for many of the world's best-known brands. This means that it's perfectly placed to research innovative solutions and new concepts for Omni-Channel communication challenges.

For more information please go to <https://omni-channel.ercis.org/> or check out the introduction in the Network Research Activities section of this annual report.

ARVATO – FAST FACTS

Arvato CRM Solutions has 44,600 people at 110 customer service centers in 27 countries speaking 35 languages and is recognized as a 'clear leader' in the global customer services/customer experience (CX) sector¹. It is a part of Arvato, the world's third largest BPO provider² and, in addition to customer services, the company also provides supply chain solutions, finance business process outsourcing (BPO), and IT solutions, with total revenues of €3.8 billion in 2016. Arvato is wholly owned by Bertelsmann.

¹CCO – Service Provider Landscape with PEAK Matrix™ Assessment 2017 by Everest Group June 2017.

²HJS BPO Top 50' by HJS Research July 2017.

avantum consult

ABOUT THE COMPANY

avantum consult is a Business Analytics specialist. We design and implement integrated Performance Management Systems to enable companies to systematically improve their target achievement and in this way to promote increased performance on a sustained basis. Our services comprise:

- Tools for agile strategy implementation
- Definition and implementation of Business Analytics strategies
- Implementation of Business Analytics competence centers
- Functional and technical analysis and design of Analytics Solutions
- Implementation of trend-setting Analytics Solutions
- System checks and optimizations of extensive BI landscapes

Our core competencies include Data Management and Big Data, Reporting and Analytics, Planning and Forecasting, Artificial Intelligence and Advanced Analytics:

Data Management & Big Data

- ETL
- DWH
- Big Data Architectures
 - Data Lakes
 - Data Vault
 - HDFS

Planning & Forecasting

- Integrated Corporate Planning
- Functional Area Planning
- Simulations & Scenarios
- Forecasting & Predictive Planning

Reporting & Analytics

- Legal Reporting
 - Fast Close
 - Legal Consolidation
- Management Reporting
- Analytical Reporting
- Dashboarding

Artificial Intelligence & Advanced Analytics

- Predictive Analytics
- Cognitive Analytics
- Optimization Analytics

Our solutions are based on the market-leading technologies from IBM and SAP.

We are an IBM Gold Business Partner and have a leading position on the market, especially in the field of Planning Analytics TM1.

In the field of SAP we employ more than 100 SAP Business Analytics consultants group-wide and we have an extensive portfolio of efficiency-increasing additional solutions and our own application management.



- TM1 / Planning Analytics
- Predictive with SPSS
- Optimization with CPLEX
- Pure Data for Analytics
- Cognos BI / Watson Analytics
- Predictive Customer Intelligence
- Bluemix (platform)



- SAP BW and BW/4HANA
- SAP BO:
- Lumira 2.0
 - Crystal Reports
 - Analysis for Office
 - Web Intelligence
- SAP Analytics Cloud (Platform)
- SAP BPC

Our extensive consultancy experience and knowledge relating to our customers' manifold technical challenges are incorporated in our solutions that are based on IBM and SAP technologies.

Thanks to a modular structure you receive pre-configured business content "out of the box" and select precisely those modules and functions that meet your needs. This enables us to provide our customers with individual business logics that have also been field tested and to ensure short implementation times. Our solutions feature a high level of standardization, have been tested multiple times in practice, and are continuously improved.

Our customers get a powerful, reliable, and sustainable solution that is selected and adapted to meet their individual requirements.

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 for our locations in Düsseldorf, Filderstadt, Munich, Hamburg and Zurich. Our hierarchy model allows for the following levels 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

Follow us on:





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 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. The high quality display is based on leading e-paper technology and guarantees optimum readability and no reflections on the screen. 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 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 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 thanks to the simple user functionality and automatic interfaces. Bison is a general contractor and covers all the processes of a modern retailer 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 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 best 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. More than 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

- Customer centric development
- Connected machines
- Farming 4.0
- Agile IT development
- Precision Farming
- Data Management

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 come through, especially in drive technology, machine intelligence and networking.



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.

The new CLAAS "Greenhouse" in Harsewinkel, Germany is the new place for interdisciplinary co-working and creativity. The architecture is completely open for workshops and projects from overall CLAAS and external stakeholders who want to create the CLAAS future actively with agile project management methods like design thinking. CLAAS is investing in its digital future and has now laid the foundations for a new electronics development center in Dissen, near Osnabrück, Germany.

JOB OPPORTUNITIES

CLAAS is special because it is a family-owned enterprise 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: Senior software developer for operating systems, Software developer for embedded software, Application developer SAP, UX / UI design
- Selected vacancies in Germany for students: Thesis student for SharePoint solutions, Internship digital transformation, Internship online business after sales, Internship digital transformation, Internship eCommerce and customer portal

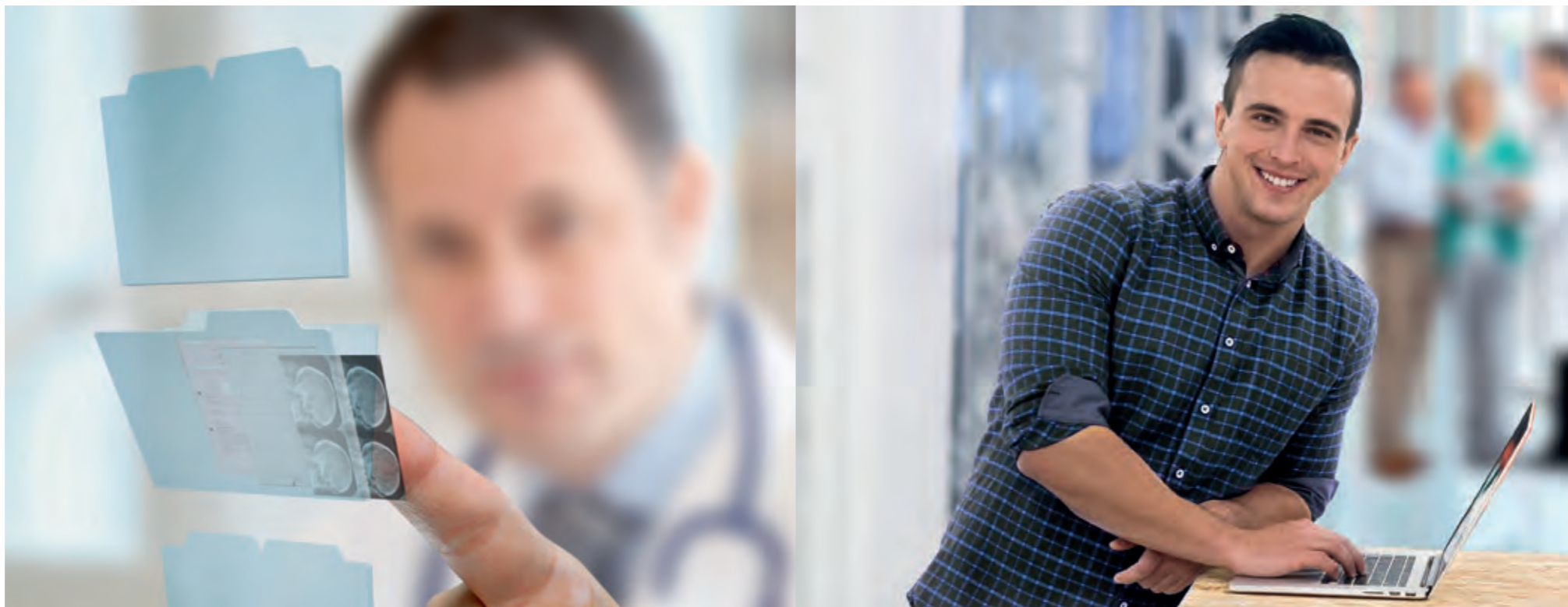
If you have any questions about our current international vacancies, our contacts at the respective locations are happy to help.

Further information: www.claas.jobs

Instagram: [@claas_careers](https://www.instagram.com/claas_careers)

D·M·I

ARCHIVIERUNG



ESB_Professional/shutterstock.com

ABOUT THE COMPANY

Healthcare is a major concern to all of us. We have relatives or friends who are patients, and there is a certain likelihood we ourselves may become patients at some point in our lives. DMI focuses on enabling German hospitals to provide the best possible medical care – based on safe, fast, and effective clinical and administrative processes empowered by digital patient information.

This task is even more important in a healthcare market which is experiencing a trend with a huge momentum – Digital Transformation. Just like in all other sectors, this major shift is changing work processes, business models, partnerships, and the relationship with patients. Digital Transformation is leading to connected health with higher efficacy and better outcomes. Readily available patient records – in interoperable digital formats and system architectures – are the enabler at the heart of this revolution.

What is the positioning of DMI in this transition? This provider of specialist services has more than 50 years of expertise in archiving patient records. With technologies and requirements changing over the years, DMI has been fulfilling its mission of offering services which comply with rigid German regulations in particular in the area of data privacy and archiving. Intelligent digitization of – widespread – paper records including identification of document types and consolidation with electronic documents serve to power comprehensive repositories for convenient clinical and administrative processes. DMI sports top certifications such as ISO 27001 and offers interoperability according to healthcare communication standards organizations such as HL7, IHE, and DICOM. Jointly with standardization bodies, the company's research teams develop patient documentation frameworks and tools. They support safe and precise diagnosis and therapy as well as enhanced administrative and economic results for roughly 800 medical service providers across the care chain.

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 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 vacancies in Germany for professionals: (senior) software developers for applications, experts for IT infrastructures and networks
- Selected vacancies in Germany for students: thesis students (IT / software development) for innovation in documentation and archiving enabled by state-of-the-art IT and by Digital Transformation.

FOR MORE INFORMATION,

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www.dmi.de



ABOUT THE COMPANY

At Hilti we make and design leading-edge technology, software and services, which power the professional construction industry. We're global, based in over 120 countries with more than 25,000 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 your build – 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 230,000 interactions worldwide online, on the phone and onsite. And at Hilti we don't believe in just sitting in the office. Our sales teams and field engineers work closely with our customers onsite, finding solutions to make builds faster, easier and safer. All this drives our innovation, because we know and understand what our customers really need.

At Hilti we like to do things differently. We create technologies, software and services, which clearly stand out from the rest. We run our own research and design labs, working with top technical universities and partners, all over the world. We make our own products in Hilti factories and with external partners, making sure all our products match the same high quality and standards. And we are a privately owned company, founded in 1941 by Martin Hilti and still held by the Hilti family today. So we are looking to build for the future and not for a short term gain.

And Hilti is a great place for you to show your worth as you learn, grow and carve-out your career in Information Technology. Within Hilti, Global IT develops together with Business Units and Market Organizations solutions to drive the digital transformation of Hilti. Our three strategic locations – Buchs (CH), Kuala Lumpur (MY), Tulsa (US) Plano (US) – offer a truly global perspective.

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

- Business Process Management
- IT Project Management & IT Governance
- Smart Workplace & Client Technology
- Digital Customer Collaboration
- Cloud Deployment
- Internet of Things
- User Mobility & Mobile Apps

JOB OPPORTUNITIES

- IT Process Consultants in SCM, Sales or FICO in Kuala Lumpur, Malaysia or Buchs (SG), Switzerland
- Junior IT Specialist – Logistics Execution and Warehousing in Buchs (SG), Switzerland
- Junior SAP Platform & Security Specialist in Buchs (SG), Switzerland
- Junior Process Integration Developer SAP in Switzerland, United States or Malaysia
- Internship on Digital Customer Collaboration in Buchs (SG), Switzerland
- Intern or thesis student: Hilti Cloud Architecture and Service Development in Buchs (SG), Switzerland
- Hilti Fellowship program at University of Liechtenstein

Find more open positions on <https://careers.hilti.com/en/job-areas/digital-space>
or
<https://www.experis.ch/hilti-vacancies>



OWNCLOUD: STORE. SHARE. WORK.

In the research and education market, ownCloud has initiated interconnected Private Clouds for Universities and Researchers worldwide. Leading research organizations in the Americas, Europe and Asia/Pacific joined to create world's largest public private cloud mesh.

ownCloud is currently being adopted by these institutions faster than by any other type of ownCloud customer. Customers tell us this due to many reasons, but the top three reasons are as follows:

- ownCloud seamlessly integrates with an institution's existing security and rights-management protocols, allowing IT admins the ability to extend those same protocols to cloud-hosted data, negating internal and external compliance issues.

- ownCloud works well across all major operating systems and mobile devices in use at today's schools and universities. Whether students or faculty come equipped with iPhones or Android devices, Macs or PCs, Chrome or Safari, or any other major platform, ownCloud delivers a seamless experience.

- ownCloud delivers to schools and universities a comprehensive and flexible solution at a discounted subscription-based price point that fits well within the tight IT budgets of modern educational institutions.

For research and education customers we have negotiated a framework agreement with the GÉANT Association. The GÉANT Association, representative of the European National Research and Education Networks and ownCloud have agreed on a favored pricing scheme for GÉANT members and their attached constituents. For further information please contact us: sales@owncloud.com

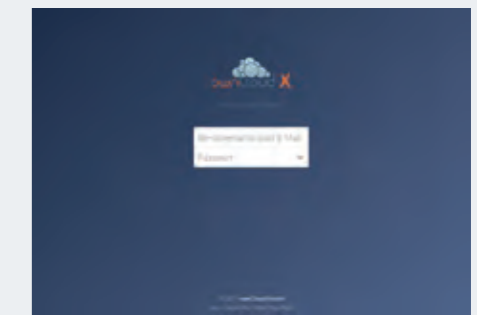
ABOUT THE COMPANY

With its innovative solution, ownCloud is one of the leading providers of software for secure data exchange (Enterprise File Sync & Share) with a growth-rate at over 100% in German-speaking countries and 65% in general. Organizations that must share confidential data internally and externally rely on ownCloud's On-Premises EFSS Platform. Only ownCloud gives IT the visibility and control required to manage sensitive data, preserve business processes and integrate with existing compliant infrastructures while offering users the modern collaboration experience they demand. This is made possible through ownCloud's open, modular architecture, extreme extensibility and unique federated cloud sharing capabilities. The business model of ownCloud is very similar to other successful Open Source companies, offering a Community and Enterprise Edition. The Enterprise Edition includes additional functionalities, services and support around ownCloud for the enterprise. The company is dedicated to working entirely in the open, accelerating development in the areas of its customer's needs while enabling a completely open development process where everybody can contribute.

Learn more about ownCloud:
<https://owncloud.com>



ownCloud again #1
in Enterprise Filesharing



The latest version, ownCloud X,
is available since May 2017

JOB OPPORTUNITIES

ownCloud is always looking for new talents. Please visit:
<https://owncloud.com/jobs/>

INFORMATIONSFABRIK

DATEN VERSTEHEN, ENTSCHEIDUNGEN TREFFEN

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 Business Analytics, Business Intelligence, and Data Science. Our focus lies on the financial and insurance service industry, and the banking 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 Data Science, 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 you certainty in a couple of mouse clicks is the goal we have devoted ourselves to.

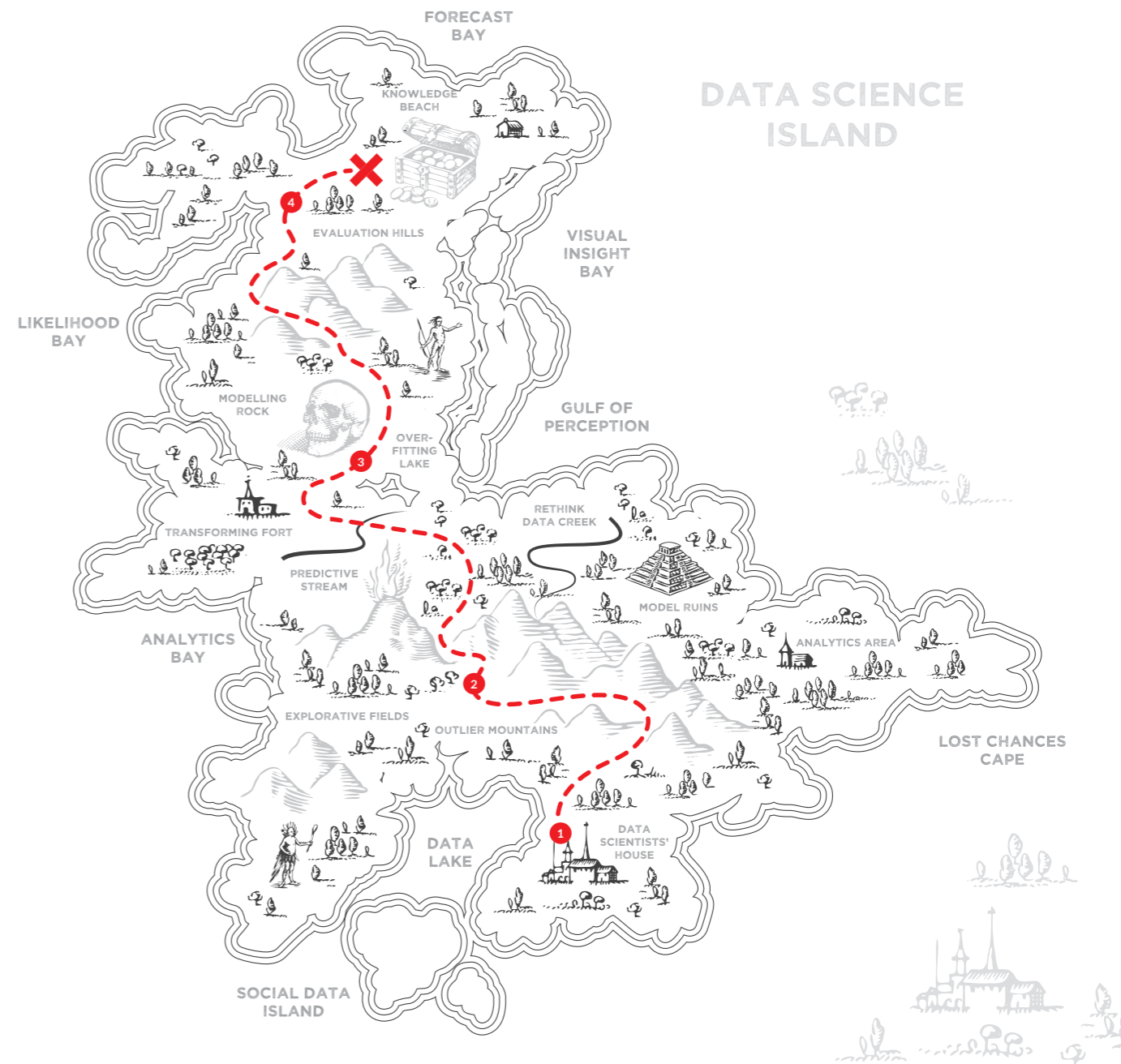
JOB OPPORTUNITIES

- Data Scientist
- Big Data Engineer
- Scrum Master
- Internship

Send your application to:
personal@informationsfabrik.de

For further information please visit:
www.informationsfabrik.de

AHOY AND WELCOME TO THE TREASURE HUNT!



WWW.DATA-SCIENCE-ISLAND.DE



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 and operates over 10,000 stores, more than 150 distribution centers in currently 28 European countries and has some 225,000 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 2016 financial year, Lidl generated revenues of 69 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. The IT landscape at Lidl is in the biggest transitional phase in the company's history. The strategic alignment places the focus on closely coordinated international collaboration and digitalization. IT at Lidl is tasked with ensuring seamless interconnectivity with a highly available and integrated system landscape and the application of the latest technologies. Lidl's high-performing, motivated and entrepreneurial 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
- SAP HANA
- Big Data & BI
- SAP Retail/EWM/CAR
- Salesforce
- SuccessFactors

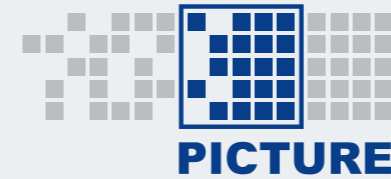
- GK Software
- Hybris
- Solution Development
- Design Thinking

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 IT at Lidl – a wide range of exciting tasks await you! We are looking for go-getters who hit the ground running, always think ahead and enable to make things happen.

Lidl. More IT than you might think! Find out about our attractive job offers at jobs.lidl.de, xing.com/company/lidl, twitter.com/lidl



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 building 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 Budget Consolidation
- Implementation of Document Management Systems Reorganisation Studies Interface Analyses, Implementation of Software



25 YEARS OF CONSULTING AND SYSTEM INTEGRATION FOR BIG DATA, DATA WAREHOUSE, BUSINESS INTELLIGENCE, CORPORATE PERFORMANCE MANAGEMENT AND ANALYTICAL CUSTOMER RELATIONSHIP MANAGEMENT

- Analytic Systems**
- Reporting & Analysis
 - Cockpits & Scorecards
 - Planning Systems
 - Data Modelling
 - Mobile BI
 - Predictive Analytics
 - BI Reviews
 - Analytic CRM
 - Campaign Management



- Integration Architecture**
- Data Governance
 - Architectures for analytic Systems
 - Data Warehouse (ETL-Processes)
 - Data Quality
 - Master Data Management

- New Topics**
- Big Data: Hadoop
 - Cloud Analytics
 - Agile DWH / Scrum
 - Data Vault
 - Machine Learning
 - Data Virtualization
 - DWH Automation
 - Social Media Monitoring

ABOUT THE COMPANY

saracus is one of the leading independent consulting companies for big data, data warehouse, business intelligence and customer relationship management in Germany and Switzerland with more than 60 consultants. Over the last 25 years, saracus has amassed a wealth of experience in more than 300 various projects. Our impressive customer list and customer testimonials are the best proof of how successful projects result in satisfied customers.

saracus competence and portfolio of services

It is the stated vision of saracus to increase the analytical competence of companies and non-profit organizations in order to specifically strengthen the competitive position of these customers. The instruments for reaching this goal are pithily summarized with the terms big data, data warehouse, business intelligence and analytical customer relationship management. The services provided by saracus cover all aspects of these topics.

DWtec® and DWinsurance

Data warehouse projects are very complex regarding to requirements of skills, processes, technology and general conditions within the client's corporation. Accordingly the process model has to accommodate this complexity. DWtec® is the process model of saracus for data warehousing projects; it is based on long term experiences and gets updated permanently. Since 2012 DWtec® has been extended by comprehensive sectoral data models – first of all, for the sector insurance: DWinsurance. Fur-

ther data models (e.g. for retail, telecommunication, manufacturing) will follow.

Big Data academy

The Big Data academy allows saracus to make its practically orientated expertise available to customers in numerous seminars on a wide range of big data and BI topics. These include training courses such as introduction in big data, big data strategy, Hadoop administration training, Hadoop developer training, dimensional data modelling, data quality and ETL processes. These seminars are also offered inhouse. For information on the latest offers and to subscribe to the newsletter, visit www.saracus.com.

Partnerships

saracus has maintained intensive partnerships with all major software companies in the data warehouse and business intelligence sector for many years. In addition, many of the consultants who work at saracus are also certified on the products of the software partners. To ensure that these partnerships do not cause saracus to lose its neutrality, we never operate as a reseller.

Why saracus consulting?

The following factors demonstrate why saracus is the consulting and integration partner for you:

- Fully focused on Big Data, DWH, BI and aCRM for over 25 years
- In-depth experience with important technologies
- A combination of business and IT know-how
- A large number of trained and experienced consultants for on-time completion of major projects
- Full service – from analysis and concept development to system integration and operation
- A procedural methodology specific to DWH
- Total commitment to the success of the project

JOB OPPORTUNITIES

For students: Diploma/Bachelor theses, internships

For graduates: (Junior) Consultants

Please visit our website for further information: www.saracus.com



ABOUT THE COMPANY

Vodafone Germany is a leading integrated telecommunications company and Germany's largest cable television operator, offering fixed broadband, mobile communications, internet and TV services. As a gigabit company, Vodafone is a key contributor to the development of Germany's 5G infrastructure. The Düsseldorf-based company's continuous investments in faster fixed and mobile networks are taking Germany forward into the gigabit society.

Vodafone Germany offers a comprehensive ICT portfolio for enterprise customers, networking people and machines, facilitating secure corporate networks and storing enterprise data in the German cloud. Around 90% of all DAX-listed companies and 15 of Germany's 16 federal states are already Vodafone customers. Vodafone Germany has 14,000 employees and generates annual revenue of € 11 billion with 45.7 million SIM cards, 6.5 million fixed broadband customers and numerous digital solutions.

Vodafone Germany is the largest operating company of the Vodafone Group, one of the world's largest telecommunications companies with mobile operations in 26 countries and partners with mobile networks in 48 more. It also has fixed broadband operations in 19 countries. Vodafone has around 522.8 million mobile customers and 18.8 million fixed broadband customers around the world.

Visit the website for further information: www.vodafone-deutschland.de





ABOUT THE COMPANY

zeb is the number one strategy and management consultancy for financial services in Europe. With more than 950 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



COLLABORATION WITH ECWT

The European Centre for Women and Technology provides a European level meeting place for 130+ leading public-private actors, academia and NGOs collaborating for measurably and significantly increasing the number of girls and women in technology in general and ICT in specific. ECWT serves as a European single point of contact for information, collection and analysis of data, research and the development of appropriate methodological tools to attract more girls to Science, Technology, Engineering and Mathematics (STEM), for nurturing and retaining women in the knowledge economy through industry and entrepreneurial careers, for promoting the female talent to provide added value to ICT solutions, for supporting more female ICT business start-ups and consolidating the largest network for closing the Digital Gender Gap in Europe.

We are proud to have ERCIS among our Members and believe that with the extended governance structure adopted from 2014 ECWT Alliances and ERCIS Competence Centres should be able to identify joint research priorities for working together within HORIZON2020.

Eva Fabry

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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 Drillisch AG. 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:

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.

RESEARCH TOPICS

Optimization, Innovation, Omnichannel, Telecommunication, Workflow Management, CRM, Web Sales, Retail, Business Intelligence, Service Management and Security, Hosting and Cloud Solutions

JOB OPPORTUNITIES

We are offering various job opportunities within our Software Developing, Billing, Operation, Business Intelligence 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.

www.iq-optimize.de



SAP

Helping the World Run Better

As the market leader in enterprise application software, SAP is at the center of today's business and technology revolution. Our innovations enable more than 296,000 customers worldwide to work together more efficiently and use business insight more effectively.

SAP helps organizations of all sizes and industries overcome the complexities that plague our businesses, our jobs, and our lives. With Run Simple as our operating principle, SAP's nearly 75,600 employees focus on a singular purpose that inspires us every day: To help the world run better and improve people's lives.

For more information, visit:
www.sap.com



CHRIST

Jeweler and watch maker since 1863.

The Christ jewelry stores lead the market in Germany in the mid to upper price range of the jewelry and watches segment.

For more information, visit:
www.christ.de

OUTLOOK FOR 2018

JANUARY 2018

EUROPEAN DATA PRIVACY DAY, Vaduz, Principality of Liechtenstein, 25.1.2018

FEBRUARY 2018

START OF THE EXECUTIVE CERTIFICATE IN BUSINESS PROCESS MANAGEMENT, www.bpm-executive.com

PHD SKI SEMINAR, Klosters, Switzerland, 05–10 February 2018

LIECHTENSTEIN WINTER SCHOOL ON BPM AND DATA SCIENCE, Vaduz, Principality of Liechtenstein, 18–23 February 2018, www.winterschool.li

MARCH 2018

STUDENT TRACK AT MKWI 2018, Lüneburg, Germany, 06–09 March 2018, www.mkwi2018.leuphana.de

10TH ASIAN CONFERENCE ON INTELLIGENT INFORMATION AND DATABASE SYSTEMS (ACIIDS 2018), Quang Binh University, Dong Hoi, Vietnam, 19–21 March 2018, <https://aciids.pwr.edu.pl/2018/>

APRIL 2018

STUDY TRIP FROM LIECHTENSTEIN TO WU VIENNA, Vienna, Austria

JUNE 2018

PHD SAILING SEMINAR, Pto. Pollensa, Spain, June 9–16, 2018

AUGUST 2018

9TH ANNUAL ERCIS WORKSHOP, Luleå University of Technology, Sweden, August 22–24, 2018

SEPTEMBER 2018

11TH ANNIVERSARY OF THE EUROSYPHOSEUM CONFERENCE, eurosymposium.eu

MANAGEMENT TRACK AT BPM CONFERENCE 2018, Sydney, Australia, 09–14 September 2018, <http://bpm2018.web.cse.unsw.edu.au/>

11TH INTERNATIONAL CONFERENCE ON MULTIMEDIA & NETWORK INFORMATION SYSTEMS (MISSI 2018), Wroclaw University of Science and Technology, Wroclaw, Poland, 12–14 September 2018, <https://missi.pwr.edu.pl/2018/>

10TH INTERNATIONAL CONFERENCE ON COMPUTATIONAL COLLECTIVE INTELLIGENCE (ICCCI 2018), University of the West of England, Bristol, UK, 5–7 September 2018

OCTOBER 2018

3RD INTERNATIONAL JOINT CONFERENCE ON ELECTRONIC VOTING, Bregenz, Austria, 2–5 October 2018, e-vote-id.org

15TH EDITION OF THE ITAIS CONFERENCE

ERCIS TEAM

› ERCIS Team www.ercis.org



For everything that concerns the ERCIS network simply write an email to team@ercis.org. 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



IMPRINT

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