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## Chairs' Welcome

We are pleased to welcome you to the 22nd International Conference on Knowledge - Based and Intelligent Information & Engineering Systems (KES 2018), organised by KES International in collaboration with the Society for ETRAN, Belgrade, Serbia. The conference was held at the Metropol Palace Hotel in Belgrade, Serbia during 3-5 September 2018.

KES 2018 is the 22<sup>nd</sup> event in a series of broad-spectrum intelligent systems conferences first held in Adelaide, Australia in 1997. The main aim of this KES conference series is to provide an internationally respected forum for the dissemination of research results and the discussion of issues relating to the theory, technologies and applications of intelligent engineering and information systems.

This truly international conference has attracted a substantial number of researchers and practitioners from all over the world, who submitted their papers to three general tracks, one thematic track and 30 special sessions on specific topics. A large number of submissions was received and each paper was peer reviewed by at least two members of the International Program Committee. From them, 240 high-quality papers were accepted for oral presentation and publication in *Procedia Computer Science*, submitted for indexing in Conference Proceedings Citation Index (CPCI) and Scopus.

The conference chairs would like to express their gratitude to the Keynote Speakers: Prof Matteo Cristani, University of Verona, Italy; Prof Vladan Devedzic, University of Belgrade, Serbia; Prof Hideyuki Kanematsu, Suzuka College, Japan; Prof Edward Szczerbicki, The University of Newcastle, Australia; and Prof Atsuko K. Yamazaki, Shibaura Institute of Technology, Japan

We would like to acknowledge also the Programme Co-Chairs, the General Track Chairs, the International Programme Committee members and reviewers for their valuable efforts in the review process, helping us to guarantee the highest quality possible for the conference. We would also like to thank the organisers and chairs of the special sessions which make an essential contribution to the success of the conference.

Lastly, we would like to thank all the authors, presenters and delegates for their valuable contribution in making this an extraordinary event.

KES International and the Society for ETRAN hope and intend that KES2018 will make a significant contribution to international research collaboration and understanding, an essential task for the promotion of scientific joint work and excellence.

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KES2018 is part of the KES Conference Series

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The organisation and operation of KES2018 is the responsibility of KES International.

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## General and Thematic Track Sessions

Code	Track Title	Track Chair
<b>G01</b>	Theoretical Foundations of Intelligent Systems: Theories, Algorithms and Methodologies	Prof. Cecilia Zanni-Merk
<b>G02</b>	Intelligent Applications	Dr Carlos Toro
<b>G03</b>	Emergent Intelligent Technologies	Prof Ron Hartung
<b>T01</b>	Knowledge Technologies	Prof Anne Hakansson

## Invited Sessions

Code	Session	Session Chair
<b>IS01</b>	Interdisciplinary Approaches in Data Science and Business Intelligence Practice (IADBIP 2018)	Prof. Ivan Luković, Prof. Ralf-Christian Härting
<b>IS02</b>	Knowledge Engineering in Large-Scale Systems	Dr. Sergey V. Zykov
<b>IS03</b>	Intelligent Transportation Systems	Dr Milan Simic
<b>IS04</b>	Data Science for Big Data	Professor Katsutoshi Yada, Professor Takahira Yamaguchi
<b>IS07</b>	Numerical Modelling and Recognition Techniques	Prof. Margarita N. Favorskaya, Dr Alena V. Favorskaya, Prof. Lakhmi Jain
<b>IS08</b>	Reasoning-based Intelligent Systems	Prof.Dr.Kazumi Nakamatsu, Prof.Dr.Jair M. Abe
<b>IS09</b>	Networks for Innovation, Knowledge Creation and Sharing	Prof. Dr. Shuichiro Yamamoto
<b>IS10</b>	Knowledge and data engineering in medicine and health care	Assist. Prof. Wieslaw Paja, Assoc. Prof. Krzysztof Pancerz, Assoc. Prof. Catalin Stoean
<b>IS11</b>	Metaheuristics and multiagent models for flexible manufacturing systems	Dr. Housseem Eddine Nouri, Dr. Olfa Belkahla Driss
<b>IS12</b>	Contemporary issues in Computer education	Assoc. Prof. Hiroko Kanoh, Prof. Toyohide Watanabe, Professor Hironori Hironori Nozaki, Prof. Hironori Sasaki, Professor Kyota Aoki, Prof. Yoshiyuki Yabuuchi, Assoc. Prof. Yukiko Maruyama
<b>IS13</b>	Chance Discovery and Market of Data	Prof. Akinori Abe, Prof. Yukio Ohsawa, Prof. Noriyuki Kushiro
<b>IS14</b>	Cyber-Physical Systems and Applications	Prof. Anne Hakansson, Prof. Ronald Hartung
<b>IS15</b>	Computational Intelligence System and Applications	Prof. Yuji Iwahori, Prof. Yoshinori Adachi, Prof. Nobuhiro Inuzuka, Assis. Prof. Ryosuke Yamanishi

Code	Session	Session Chair
<b>IS16</b>	Smart Education: Active Learning using ICT and e-Learning	Prof. Nobuyuki Ogawa, Prof. Hideyuki Kanematsu, Prof. Kuniaki Yajima, Prof. Takashi Yukawa, Assis. Prof. Katsuko T. Nakahira, Prof. Kazunori Nishino
<b>IS17</b>	Human factors for communication & intelligent systems	Dr. Atsuko K. Yamazaki
<b>IS18</b>	Immunity-Based Systems: Resilient Computing for IoT	Prof. Dr. Yoshiteru Ishida, Assoc. Prof. Dr. Takeshi Okamoto
<b>IS19</b>	Information Technology Applications in Data Analytics and Software Development	Dr. Gongzhu Hu, Dr. Narayan Debnath
<b>IS20</b>	Knowledge-Based Systems for e-Business	Prof. Kazuhiko Tsuda, Prof. Masakazu Takahashi, Dr. Nobuo Suzuki
<b>IS21</b>	Multi-Criteria Decision-Analysis methods – theory and their applications	Dr. Jarosław Wątróbski, Dr. Wojciech Sałabun, Dr. Jarosław Jankowski
<b>IS22</b>	Information Systems and Technologies for Management and Economy	Dr. Jarosław Wątróbski, Dr. Wojciech Sałabun, Dr. Jarosław Jankowski, Prof. Joanna Paliszkiewicz
<b>IS23</b>	New Generation Computing in Engineering, Life Science and Economy	Dr. Piotr Nikończuk, Prof. Elisabeth Rakus-Andersson
<b>IS24</b>	Cyber Security and Big Data	Prof. Alfredo Cuzzocrea, Dr. Fiammetta Marulli, Dr. Francesco Mercaldo
<b>IS25</b>	Key Enabling Technologies for Virtual Factories	Prof. Federica Mandreoli, Prof. Giacomo Cabri
<b>IS26</b>	Skill Acquisition and Ubiquitous Human Computer Interaction	Assoc. Prof. Masato Soga, Assist. Prof. Hirokazu Miura, Prof. Hirokazu Taki
<b>IS27</b>	Signal and Image Processing Algorithms and Pattern Recognition Techniques for Automated Identification/Classification Systems	Dr. Paolo Crippa, Prof. Claudio Turchetti
<b>IS28</b>	RF and FSO channel modelling for wireless transmission and performance analysis	Assoc. Prof. Stefan Panić, PhD

Code	Session	Session Chair
IS29	Internet-of-Things and Intelligent Systems	Prof. Xiangpei Hu, Assoc. Prof. Lijun Sun
IS30	Intelligent Network Security and Digital Forensics	Prof. Oliver Popov, Dr. Esmiralda Moradian



## Plenary Talks

**Prof Matteo Cristani**

University of Verona, Italy

### *The Artificial Intelligence of Things*

**Abstract:** Imagine a world in which single objects communicate to each other and to the humans, by a high-level communication protocol, and with a language that is similar to the regular human languages, for instance by a natural spoken language, or a sign language.

Imagine a world in which you can ask to the keys you have in hands: "Where did I park the car?". And also imagine that these objects are connected to each other, so that you can step forward this level of questions. "Hey, house, do I have all the ingredients I need for a walnut cake?". Imagine a world in which you can leave messages to the others in the house: "I had to hurry out, remember to hang out the laundry".

In industrial applications, also, many communications with objects, and among objects can provide strategic advantages. Consider a scenario in which you have a complex industrial machinery, and a worker leaves work since his turn has finished. "When the further operator comes in, remember him that the reset of the line requires warming up of ten minutes for the operation in course".

There are enormous challenges to deal with in order to realize such wonderful desiderata. We can look at three essential aspects:

Integrate artificial intelligence and IoT, in order to provide objects with communication and reasoning skills;

Determine relevant aspects of the integration process and deal with them, in particular:

- Reasoning in presence of limited computational resources, especially memory;
- Provide correct methods to integrate partial and asynchronous reasoning processes in such a way that the resulting decision is sound;
- Deal with partial and potentially incorrect knowledge, incorrect reasoning, inconsistent decisions by different actors.

The keynote will be envisioning the potentials of the aforementioned integration processes, and show what challenges shall we expect forward.



**Biography:** Matteo Cristani is Aggregate Professor in the Department of Computer Science of the University of Verona, where he teaches Semantic Web and leads the group KREARTI (Knowledge Representation and applied ARTificial Intelligence). He is the author of more than 60 scientific publications in quality journals and

conferences, since 1997. He had been developing more than twenty research projects in Artificial Intelligence, he is member of the Programme Committees of KES, KES AMSTA, RuleML, ICAIL, ICAART and other international conferences, and he acts as a reviewer in several international journals. He has been leading more than thirty knowledge transfer activities, and is active in the KES community since 2007.

**Prof Vladan Devedzic**

University of Belgrade, Serbia

***Teaching intelligent systems: a case with a long history***

**Abstract:** This talk focuses on experiences with teaching intelligent systems at the University of Belgrade over the past two decades. As the field itself was developing, the courses had to adapt to the new developments and trends, sometimes with warm welcome from the students' side, but not with high enthusiasm at other times. Many lessons have been learned to this end, both pedagogical and practical. Put in the context of varying interests in different AI topics over time, these lessons have been found to go beyond the specifics of the courses that have been taught. Enforcing an interdisciplinary approach when teaching intelligent systems has proven to be the key to gaining students' interest and getting positive reactions. Examples illustrating the lessons learned make a substantial proportion of the talk.



**Biography:** Vladan Devedzic is a Professor of Software Engineering at the Faculty of Organizational Sciences (School of Business Administration), University of Belgrade, Serbia. He also used to teach several computer science courses at the School of Electrical Engineering, University of Belgrade, as well as at the Military Academy of Serbia. His long-term professional objective is to bring close together ideas from the broad fields of intelligent systems and software engineering. His current professional and research interests include software engineering, programming education, intelligent

software systems and technology-enhanced learning (TEL).

He is the founder and the chair of the GOOD OLD AI research network.

**Prof Hideyuki Kanematsu**

National Institute of Technology, Suzuka College, Japan

***Activation of E-learning Classes by Virtual Problem Based Learning - From Real to Virtual World***

**Abstract:** Problem Based Learning is one of the powerful tools for active learning. My colleagues and I investigated the possibilities how to activate e-learning classes by virtual Problem Based Learning. In my lecture, I will introduce all of our endeavors about the topic so far.



**Biography:** Dr. Hideyuki Kanematsu is a professor of materials science and engineering at the National Institute of Technology at Suzuka College in Japan. Hide's areas of interest include biofilm engineering, surface engineering, corrosion and STEM Education (Active learning by e-learning). He holds a B.Eng. (1981), a M.Eng(1983) and a Ph.D in Materials Science and Engineering (1989) all from Nagoya University. He is active members, board members,

editorial members of ASM International, National Association for Surface Fishing, the USA (NASF), the Institute of Metal Finishing, UK(IMF) as well as the Minerals, Metals & Materials Society, USA(TMS), American Chemical Society (ACS), Electrochemical Society (ECS), the Japan Institute of Metals (JIM) and the Iron & Steel Institute of Japan (ISIJ) etc.

**Prof Edward Szczerbicki**

The University of Newcastle, Australia

***Smart Engineering of Experience with Decisional DNA: Challenges, Approaches, and Case Studies***

**Abstract:** The concept of Decisional DNA, a unique knowledge representation based on experience, is decade old. This presentation introduces the initial idea of Set of Experience Knowledge Structure, its advancement into Decisional DNA, and its many real life applications in such diverse domains as medicine, maintenance, energy, robotics, industrial hazard control, autonomous cars, and product development. The most current and future research steps into Industry 4.0 and Internet of Things are also discussed addressing emerging challenges related to the concept of semantically enhanced knowledge-based society and cyber-physical systems. The overall aim of this keynote talk is to provide guidelines to develop tools for smart processing and engineering of experience. Still, the guide does not presume to give ultimate answers. Rather, it poses ideas and case studies to explore. It also encourages the audience to become aware of the multifaceted interdisciplinary character of such issues.



**Biography:** Professor Szczerbicki has had very extensive experience in the area of complex/intelligent systems development over an uninterrupted 35 year period, 25 years of which he spent in the top systems research centres in the USA, UK, Germany, and Australia. In this area he contributed to the understanding of information and knowledge engineering in systems operating in environments characterized by informational uncertainties and dynamics. He has published 300+ refereed papers which attracted close to 2000 citations over the last ten

years. His DSc degree (1993) and the Title of Professor (2006) were gained in the area of information science for his international published contributions. His academic experience includes ongoing positions with Gdansk University of Technology, Gdansk, Poland; Strathclyde University, Glasgow, Scotland; The University of Iowa, Iowa City, USA; University of California, Berkeley, USA; and The University of Newcastle, Newcastle Australia.

**Prof Atsuko K. Yamazaki**

Shibaura Institute of Technology, Japan

### ***Neurological factors for knowledge-based systems: NIRS studies as examples***

**Abstract:** Along with recent progress in neuroscience research, interpreting neuroscience research results in terms of human cognition and behavior has been recognized as a key for developing knowledge-based systems based on human factors. In addition, neuroscience techniques have now become more accessible to researchers in Knowledge Engineering fields. Neuroimaging, one of the techniques often utilized in neuroscience, can be effectively used to investigate activity and function in the brain. Functional neuroimaging studies in Knowledge Engineering focus on which areas of the brain perform specific tasks in relation to system enhancement by using such techniques as functional magnetic resonance imaging, electroencephalography and near infrared spectroscopy (NIRS). Bridging neuroscience data and a knowledge-based system is indispensable in order to build a system based on humans' tacit knowledge. However, it is by no means easy to incorporate neuroscience into knowledge-based engineering due to the difficulties of designing a human-factors study, of measuring neuroactivities and of interpreting the data, which often requires specialized knowledge both in neuroscience and in physiology. In this talk, the speaker will introduce some NIRS studies conducted by her research groups, for example, leveraging neuroimaging techniques for incorporating such human factors into knowledge-based systems. The results of the studies will be presented not only in association with human-system interaction, but also human-human communication.



**Biography:** Atsuko K. Yamazaki is Professor at Shibaura Institute of Technology, where she teaches communication studies and conducts research in the areas of information science, systems engineering, human communication studies and global education in engineering. She holds the following degrees: BS in Chemistry, Ibaraki University; MA in TESOL, Monterey Institute of International Studies; MS in Computer Science, University of Maryland; and Ph.D. in Systems Engineering, Wakayama University. She has held leadership positions in the IEEE Professional Communication Society and the Japan Association of College English Teachers. She was an

adjunct research instructor at the Naval Postgraduate School in Monterey, California and a visiting researcher at The Woods Hole Oceanographic Institution. She joined the Institute of Technologists as an Associate Professor in 2001 and moved to Shibaura Institute of Technology in 2008. Her work has been published by Ecological Modelling,

Deep-Sea Research, IEEE, KES, Japan Society for Artificial Intelligence, Japanese Society for Information and Systems in Education, and others. Her current research projects include studies of user-interface designs to enhance brain activity in the elderly, and human cognitive activities for human-system communication from neurological aspects. She has also been leading projects for developing ICT & IoT systems to assist small and medium farming operations. She has been serving as Chair for an Invited Session: Human Factors for Communication & Intelligent Systems, at KES conferences since 2014.

# Timetable – Sunday 2 September

	Early Registration
17.00-19.00	<b>Drinks Reception</b> <b>Metropol Palace Hotel</b> <b>Ivo Andric Ballroom Terrace</b>



## Timetable – Monday 3 September

	Ivo Andric Ballroom B (Plenary Room)	Ivo Andric Ballroom A	Nikola Tesla Ballroom A	Nikola Tesla Ballroom B	Nikola Tesla Ballroom C	Plato Room	Aristotle Room	Lavender Room	22 Restaurant
8.00-9.15	Registration								
9.15-9.30	Opening Ceremony								
9.30-10.30	<b>Keynote Speaker 1</b> <b>Matteo Cristani, University of Verona, Italy</b> <b>The Artificial Intelligence of Things</b> <b>Chair: Prof Robert J Howlett</b>								
10.30-11.00	Coffee								
11.00-13.00	<b>G1A:</b> <b>Theoretical Foundations of Intelligent Systems</b> <b>Chair: Prof Cecilia Zanni-Merk</b>	<b>G2A:</b> <b>Intelligent Applications</b> <b>Chair: Dr Yulia Hicks</b>	<b>G3A:</b> <b>Emergent Intelligent Technologies</b> <b>Chair: Prof Ron Hartung</b>	<b>IS13:</b> <b>Chance Discovery and Market of Data</b> <b>Chair: Prof Akinori Abe</b>	<b>IS01:</b> <b>Interdisciplinary Approaches in Data Science and Business Intelligence Practice (IADBIP 2018)</b> <b>Chair: Prof Ivan Luković</b>	<b>IS02A:</b> <b>Knowledge Engineering in Large-Scale Systems</b> <b>Chair: Dr Sergey Zykov</b>	<b>IS03 &amp; IS04:</b> <b>Intelligent Transportation Systems &amp; Data Science for Big Data</b> <b>Chairs: Dr Milan Simic &amp; Prof Katsutoshi Yada</b>	<b>IS09:</b> <b>Networks for Innovation, Knowledge Creation and Sharing</b> <b>Chair: Prof Shuichiro Yamamoto</b>	<b>IS10:</b> <b>Knowledge and data engineering in medicine and health care</b> <b>Chair: Prof Wieslaw Paja</b>
13.00-14.00	Lunch								

	Ivo Andric Ballroom B (Plenary Room)	Ivo Andric Ballroom A	Nikola Tesla Ballroom A	Nikola Tesla Ballroom B	Nikola Tesla Ballroom C	Plato Room	Aristotle Room	Lavender Room	22 Restaurant
14.00- 15.00	<b>Keynote Speaker 2</b> Vladan Devedzic, University of Belgrade, Serbia Teaching intelligent systems: a case with a long history Chair: Prof Lakhmi Jain								
15.00- 15.30	<b>Coffee</b>								
15.30- 16.30	<b>Belgrade Industrial Round Table</b> <b>Safety and Privacy in the Industry 4.0 Era</b> A panel of local experts, government representatives and industrialists meet to discuss technical issues.								
Meet hotel lobby 6.15 for 6.30 prompt departure	<b>Social Trip</b> <b>The Belgrade Experience</b>								

## Timetable – Tuesday 4 September

	Ivo Andric Ballroom B (Plenary Room)	Ivo Andric Ballroom A	Nikola Tesla Ballroom A	Nikola Tesla Ballroom B	Nikola Tesla Ballroom C	Plato Room	Aristotle Room	Lavender Room	22 Restaurant
8.30- 9.30	Registration								
9.30- 10.30	<b>Keynote Speaker 3</b> <b>Edward Szczerbicki, The University of Newcastle, Australia</b> <b>Smart Engineering of Experience with Decisional DNA: Challenges, Approaches, and Case Studies</b> <b>Chair: Prof Robert J Howlett</b>								
10.30- 11.00	Coffee								
11.00- 13.00	<b>G1B:</b> Theoretical Foundations of Intelligent Systems Chair: Prof Cecilia Zanni- Merk	<b>G2B:</b> Intelligent Applications Chair: Dr Yulia Hicks	<b>G3B:</b> Emergent Intelligent Technologies Chair: Prof Ron Hartung	<b>S1A:</b> Symposium on Information Systems and Technologies for Management, Economy and Decision Making Chair: Dr Jarosław Wątróbski	<b>IS15:</b> Computational Intelligence System and Applications Chair: Prof. Yuji Iwahori	<b>IS02B:</b> Knowledge Engineering in Large-Scale Systems Chair: Dr Sergey Zykov	<b>IS20A:</b> Knowledge- Based Systems for e-Business Chair: Prof. Kazuhiko Tsuda	<b>IS07A:</b> Numerical Modelling and Recognition Techniques Chair: Prof Margarita Favorskaya	<b>IS12:</b> Contemporary issues in Computer education Chair: Prof Hiroko Kanoh
13.00- 14.00	Lunch								
14.00- 15.00	<b>Keynote Speaker 4</b> <b>Prof Atsuko K. Yamazaki, Shibaura Institute of Technology, Japan</b> <b>Neurological factors for knowledge-based systems: NIRS studies as examples</b> <b>Chair: Prof. Edward Szczerbicki</b>								

	Ivo Andric Ballroom B (Plenary Room)	Ivo Andric Ballroom A	Nikola Tesla Ballroom A	Nikola Tesla Ballroom B	Nikola Tesla Ballroom C	Plato Room	Aristotle Room	Lavender Room	22 Restaurant
15.00- 15.30	Coffee								
15.30- 17.30	<b>G1C:</b> Theoretical Foundations of Intelligent Systems Chair: Prof Cecilia Zanni- Merk	<b>G2C:</b> Intelligent Applications Chair: Prof Vladan Devedzic	<b>G3C:</b> Emergent Intelligent Technologies Chair: Prof Ron Hartung	<b>S1B:</b> Symposium on Information Systems and Technologies for Management, Economy and Decision Making Chair: Dr Jarosław Wątróbski	<b>IS17:</b> Human factors for communication & intelligent systems Chair: Dr. Atsuko K. Yamazaki	<b>IS19:</b> Information Technology Applications in Data Analytics and Software Development Chair: Dr. Gongzhu Hu	<b>IS20B:</b> Knowledge- Based Systems for e-Business Chair: Prof. Kazuhiko Tsuda	<b>IS07B:</b> Numerical Modelling and Recognition Techniques Chair: Prof Margarita Favorskaya	<b>IS23:</b> New Generation Computing in Engineering, Life Science and Economy Chair: Dr. Piotr Nikończuk
Meet hotel lobby 6.30 to leave 6.45 and be seated by 7pm	Conference Gala Dinner Topciderac Restaurant								

## Timetable – Wednesday 5 September

	Ivo Andric Ballroom B (Plenary Room)	Ivo Andric Ballroom A	Nikola Tesla Ballroom A	Nikola Tesla Ballroom B	Nikola Tesla Ballroom C	Plato Room	Aristotle Room	Lavender Room
9.00-9.30	Registration							
9.30-11.30	<b>G1D:</b> Theoretical Foundations of Intelligent Systems Chair: Prof Cecilia Zanni-Merk	<b>G2D:</b> Intelligent Applications Chair: Prof Liya Ding	<b>T1A:</b> Knowledge Technology Chair: Prof Anne Hakansson	<b>S1C:</b> Symposium on Information Systems and Technologies for Management, Economy and Decision Making Chair: Dr Jarosław Wątróbski	<b>IS26:</b> Skill Acquisition and Ubiquitous Human Computer Interaction Chair: Assoc. Prof. Masato Soga	<b>IS27:</b> Signal and Image Processing Algorithms and Pattern Recognition Techniques for Automated Identification/Classification Systems Chair: Dr. Paolo Crippa	<b>IS16A:</b> Smart Education: Active Learning using ICT and e-Learning Chair: Prof. Nobuyuki Ogawa	<b>IS29A:</b> Internet-of-Things and Intelligent Systems Chair: Prof. Xiangpei Hu
11.30-12.00	Coffee							
12.00-13.00	<b>Keynote Speaker 5</b> Hideyuki Kanematsu, National Institute of Technology, Suzuka College, Japan Activation of E-learning Classes by Virtual Problem Based Learning - From Real to Virtual World Chair: Prof. Edward Szczerbicki							
13.00-14.00	Lunch							

	Ivo Andric Ballroom B (Plenary Room)	Ivo Andric Ballroom A	Nikola Tesla Ballroom A	Nikola Tesla Ballroom B	Nikola Tesla Ballroom C	Plato Room	Aristotle Room	Lavender Room
14.00-16.00	<b>G2E: Intelligent Applications</b> Chair: Dr Yulia Hicks	<b>G1E: Theoretical Foundations of Intelligent Systems</b> Chair: Prof Cecilia Zanni-Merk	<b>G1F/G2F: Theoretical Foundations of Intelligent Systems &amp; Intelligent Applications</b> Chair: Dr. Matteo Cristani	<b>S1D: Symposium on Information Systems and Technologies for Management, Economy and Decision Making</b> Chair: Dr Jarosław Wątróbski	<b>IS14 &amp; IS30: Cyber-Physical Systems and Applications &amp; Intelligent Network Security and Digital Forensics</b> Chair: Prof. Anne Hakansson & Prof. Oliver Popov	<b>IS11: Metaheuristics and multiagent models for flexible manufacturing systems</b> Chair: Dr. Olfa Belkahla Driss	<b>IS16B: Smart Education: Active Learning using ICT and e-Learning</b> Chair: Prof. Nobuyuki Ogawa	<b>IS29B &amp; IS18: Internet-of-Things and Intelligent Systems &amp; Immunity-Based Systems: Resilient Computing for IoT</b> Chairs: Prof. Xiangpei Hu & Prof. Dr. Yoshiteru Ishida
16.30-17.00	Coffee							
17.00	Closing Ceremony							

## Presentation Schedule – General Tracks

### ***G1A: Theoretical Foundations of Intelligent Systems***

Chair: Prof Cecilia Zanni-Merk

Monday 3 Sept: 11.00-13.00

Ivo Andric Ballroom B

<b>PROSE Paper No</b>	<b>Paper Title / Authors</b>
<b>k18gen-003</b>	Using unsupervised learning methods for enhancing protein structure insight Mr Mihai Teletin, Mrs Silvana Albert, Phd Maria Iuliana Bocicor, Phd Gabriela Czibula
<b>k18gen-012</b>	Representation and processing of multispectral satellite images and sequences Professor Konstantin Vasiliev, Phd Nikita Andriyanov, Assistant Professor Vitaly Dementiev
<b>k18gen-013</b>	Online determinization of large mutating automata Ing. Giovanni Caniato, Prof. Gianfranco Lamperti
<b>k18gen-015</b>	On the influence of categorical features in ranking anomalies using mixed data M. Sc. Mathieu Garchery, Prof. Michael Granitzer
<b>k18gen-018</b>	A hybrid Immigrants schema for particle swarm optimization algorithm Ph. D Student Houda Abadlia, Professor Khaled Ghedira, Assistant Professor Nadia Smairi
<b>k18gen-035</b>	A two-stage hybrid flow shop problem with dedicated machine and release date Ms Zouhour Nabli, Dr Soulef Khalfallah, Pr Ouajdi Korbaa

***G1B: Theoretical Foundations of Intelligent Systems***

Chair: Prof Cecilia Zanni-Merk

Tuesday 4 Sept: 11.00-13.00

Ivo Andric Ballroom B

<b>PROSE Paper No</b>	<b>Paper Title / Authors</b>
<b>k18gen-024</b>	A Semantic-checking based Model-driven Approach to Serve Multi-organization Collaboration Dr Tiexin Wang, Pro Frederick Benaben, Dr Aurelie Montarnal, Dr Sebastien Truptil
<b>k18gen-025</b>	Evolutionary Optimization Based on Biological Evolution in Plants Dr. Neeraj Gupta, Dr. Mahdi Khosravy, Prof. Nilesh Patel, Prof. Ishwar Sethi
<b>k18gen-026</b>	A Study of Combined Lossy Compression and Seizure Detection on Epileptic EEG Signals Mr Binh Nguyen, Dr Wanli Ma, Dr Dat Tran
<b>k18gen-034</b>	Argued opinion extraction from festivals and cultural events on Twitter Ouertatani Asma Ouertatani Asma, Gesmi Ghada Gesmi Ghada, Latiri Chiraz Latiri Chiraz
<b>k18gen-023</b>	A new incremental relational association rules mining approach Phd Student Diana-lucia Miholca, Phd Student Liana Maria Crivei, Phd Gabriela Czibula
<b>k18gen-037</b>	Analysing Neural Network Topologies: a Game Theoretic Approach M. Sc. Julian Stier, Prof. Dr. Gabriele Gianini, Prof. Dr. Michael Granitzer, Prof. Dr. Konstantin Ziegler



***G1C: Theoretical Foundations of Intelligent Systems***

Chair: Cecilia Zanni-Merk

Tuesday 4 Sept: 15.30-17.30

Ivo Andric Ballroom B

<b>PROSE Paper No</b>	<b>Paper Title / Authors</b>
<b>k18gen-043</b>	Nash-Pareto Genetic Algorithm for the Frequency Assignment Problem Mrs Fatma Laidoui, Mrs Fatima Benbouzid-Si Tayeb, Mr Nawfel Bengherbia, Mrs Malika Bessedik, Mr Massyl Yacine Khelil
<b>k18gen-048</b>	Effective distributed trust management model for Internet of Things Ms. Hela Maddar
<b>k18gen-057</b>	Four-valued Tableau Calculi for Decision Logic of Rough Set M.a. Yotaro Nakayama, Ph.d. Seiki Akama, Ph.d. Tetsuya Murai
<b>k18gen-061</b>	Mining High-Utility Patterns in Uncertain Tensors Mr. Aurélien Coussat, Dr. Loïc Cerf, Mr. Nicolas Nadisic
<b>k18gen-067</b>	Voice source modelling using modified LF model with reduced parameters Doctor Anis Ben Aicha
<b>k18gen-084</b>	NetSim -- The framework for complex network generator Mr Akanda Wahid -Ul- Ashraf, Prof Marcin Budka, Dr Katarzyna Musial

**G1D: Theoretical Foundations of Intelligent Systems**

Chair: Prof Cecilia Zanni-Merk

Wednesday 5 Sept: 9.30-11.30

Ivo Andric Ballroom B

<b>PROSE Paper No</b>	<b>Paper Title / Authors</b>
<b>k18gen-079</b>	Cooperative Multi-Agent Systems Using Distributed Reinforcement Learning Techniques Doctor Wiem Zemzem, Professor Moncef Tagina
<b>k18gen-080</b>	ONTOPLC: An ontology-driven methodology for converting PLC industrial plants to IoT Dr. Matteo Cristani, Mr. Florenc Demrozi, Dr. Claudio Tomazzoli
<b>k18gen-074</b>	How to combine spatio-temporal and thematic features in online news for enhanced animal disease surveillance? Miss Sarah Valentin, M Renaud Lancelot, M Mathieu Roche
<b>k18gen-087</b>	Partially Lazy Classification of Cardiovascular Risk via Multi-way Graph Cut Optimization Eng. Karma Fathalla, Dr. Aniko Ekart, Dr. Doina Gherghel
<b>k18gen-093</b>	A simple algorithm for the lexical classification of comparable adjectives Dr. Matteo Cristani, Ms. Ilaria Chitò, Dr. Claudio Tomazzoli, Dr. Margherita Zorzi
<b>k18gen-094</b>	A Multivariate Fuzzy Time Series Resource Forecast Model for Clouds using LSTM and Data Correlation Analysis Dr. Binh Minh Nguyen, Mr. Thang Nguyen, Dr. Giang Nguyen, Mr. Nhuan Tran

***G1E: Theoretical Foundations of Intelligent Systems***

Chair: Prof Cecilia Zanni-Merk

Wednesday 5 Sept: 14.00-16.00

Ivo Andric Ballroom A

<b>PROSE Paper No</b>	<b>Paper Title / Authors</b>
<b>k18gen-095</b>	A Scenario-based Approach; Assuring Effect of Software Product Mr Kazuki Kakimoto, Mr Yuki Ishigaki, Mr Kazuhiro Sogawa, Mr Yasushi Ueda, Mr Hiroki Umeda
<b>k18gen-098</b>	Context Modeling for Industry 4.0: an Ontology-Based Proposal Phd Student Franco Giustozzi, Dr. Julien Saunier, Prof. Cecilia Zanni-merk
<b>k18gen-103</b>	On the Study of Impacts of Brain Conditions on EEG-based Cryptographic Key Generation Systems Mr Dang Nguyen, Dr Wanli Ma, Dr Dharmendra Sharma, Dr Dat Tran
<b>k18gen-115</b>	A Combination of Reduction and Expansion Approaches to Deal with Long Natural Language queries Phd student Mohamed Ettaleb, professor Patrice Bellot, professor Chiraz Latiri
<b>k18gen-119</b>	BigDimETL with NoSQL database Mallek Hana Hana Mallek, Gargouri Faiez Faiez Gargouri, Ghozzi Faiza Faiza Ghozzi, Olivier Teste Olivier Teste
<b>k18gen-116</b>	A Decomposition-based Approach of Global Norms for Hierarchical Normative Systems Phd Student Ezzine Missaoui, Professor Sami Bhiri, Full Professor Vincent Hilaire, Associate Professor Belhassen Mazigh

***G1F: Theoretical Foundations of Intelligent Systems***

Chair: Dr Matteo Cristani

Wednesday 5 Sept: 14.00-16.00

Nikola Tesla Ballroom A

<b>PROSE Paper No</b>	<b>Paper Title / Authors</b>
<b>k18gen-051</b>	Detailed Mathematical Programming Formulations for the Aircraft Landing Problem on a Single and Multiple Runway Configurations Phd Student Meriem Ben Messaoud, Professor Khaled Ghedira, Doctor Meriem Kefi
<b>k18gen-064</b>	A New Framework of Frequent Uncertain Subgraph Mining Mr Mohamed Moussaoui, Prof Jalel Akaichi, Dr Montaceur Zaghdoud

**G2A: Intelligent Applications**

Chair: Dr Yulia Hicks

Monday 3 Sept: 11.00-13.00

Ivo Andric Ballroom A

<b>PROSE Paper No</b>	<b>Paper Title / Authors</b>
<b>k18gen-011</b>	Improvement of Quality for Business Process Modeling driven by Guidelines Phd Student Fouzia Kahloun, Professor Sonia Ayachi Ghannouchi
<b>k18gen-014</b>	Topic-based Classification through Unigram Unmasking Prof. Yaakov Hacohen-kerner, Prof. Avi Rosenfeld, B.sc. Asaf Sabag, B.sc. Maor Tzidkani
<b>k18gen-016</b>	Trading Decision of Taiwan Stocks with the Help of United States Stock Market Professor Chang-biau Yang, Mr. Hung-hsin Chen, Mr. Shih-chan Huang
<b>k18gen-017</b>	Multimodal registration of retinal images using domain-specific landmarks and vessel enhancement Mr Álvaro Hervella, Dr Jorge Novo, Dr Marcos Ortega, Dr José Rouco
<b>k18gen-028</b>	Enhancing the Attractiveness of Learning through Augmented Reality Mr. Adrian Iftene, Mrs. Diana Trandabat
<b>k18gen-032</b>	Automatic CORINE land cover classification from airborne LIDAR data Msc Jesús Balado, Phd Pedro Arias, Phd Lucía Díaz-vilariño, Msc Luis M. González-desantos

**G2B: Intelligent Applications**

Chair: Dr Yulia Hicks

Tuesday 4 Sept: 11.00-13.00

Ivo Andric Ballroom A

<b>PROSE Paper No</b>	<b>Paper Title / Authors</b>
<b>k18gen-033</b>	Genetic Algorithm for Community Detection in Biological Networks Ms. Marwa Ben M'barek, Mr. Walid Bedhiafi, Mrs. Sana Ben Hmida, Mrs. Amel Borgi
<b>k18gen-038</b>	Automatic Characterization of the Serous Retinal Detachment Associated with the Subretinal Fluid Presence in Optical Coherence Tomography Images M.sc Joaquim De Moura, Ph.d Ana Maria Mendonça, Ph.d Jorge Novo, Ph.d Marcos Ortega, Ph.d Susana Penas, Ph.d Jorge Silva
<b>k18gen-040</b>	A hierarchical Deep neural network design for stock returns prediction M. Oussama Lachiheb, Dr. Mohamed Salah Gouider
<b>k18gen-041</b>	Automatic extraction of vascularity measurements using OCT-A images B.sc Macarena Díaz, Ph.d Jorge Novo, Ph.d Marcos Ortega, Ph.d Manuel Penedo
<b>k18gen-046</b>	Scale Genetic Programming for large Data Sets: Case of Higgs Bosons Classification Assistant Professor Sana Ben Hamida, Professor Amel Borgi, Phd Student Hmida Hmida, Professor Marta Rukoz
<b>k18gen-047</b>	A novel keyword rescoring method for improved spoken keyword spotting Mr Ilyes Rebai, Mr Yassine Benayed, Mr Walid Mahdi

**G2C: Intelligent Applications**

Chair: Prof Vladan Devedzic

Tuesday 4 Sept: 15.30-17.30

Ivo Andric Ballroom A

<b>PROSE Paper No</b>	<b>Paper Title / Authors</b>
<b>k18gen-053</b>	Smart Query Optimization Approach In Distributed Environment Mme Hassen Fadoua, Professor Grissa Touzi Amel
<b>k18gen-060</b>	Ischemic Stroke Detection System with Computer Aided Diagnostic Capability Assoc. Prof. Dr. Dzati Athiar Ramli, Ms Najah Ghazali, Ms Lina Tay
<b>k18gen-070</b>	Identifying Fake News and Fake Users on Twitter Mr. Costel-sergiu Atodiresei, Mr. Adrian Iftene, Mr. Alexandru Tanaselea
<b>k18gen-071</b>	Non-Rectangular RoI Extraction and Machine Learning Based Multiple Object Recognition Used for Time-Series Areal Images Obtained Using MAV Dr. Hirokazu Madokoro, Mr. Kainuma Asahi, Prof. Kazuhito Sato
<b>k18gen-072</b>	Automatic Segmentation of Diffuse Retinal Thickening Edemas Using Optical Coherence Tomography Images M.sc Joaquim De Moura, Ph.d Jorge Novo, Ph.d Marcos Ortega, B.sc Gabriela Samagaio
<b>k18gen-083</b>	Fintech Model: The Random Neural Network with Genetic Algorithm Mr Will Serrano

**G2D: Intelligent Applications**

Chair: Prof Liya Ding

Wednesday 5 Sept: 9.30-11.30

Ivo Andric Ballroom A

<b>PROSE Paper No</b>	<b>Paper Title / Authors</b>
<b>k18gen-077</b>	A multi-objective mathematical model for the optimization of the transittability of complex biomolecular networks Mr Ali Ayadi, Prof. François De Bertrand De Beuvron, Prof. Saoussen Krichen, Prof. Cecilia Zanni-merk
<b>k18gen-078</b>	A multi-objective method for optimizing the transittability of complex biomolecular networks Mr Ali Ayadi, Prof. François De Bertrand De Beuvron, Prof. Saoussen Krichen, Prof. Cecilia Zanni-merk
<b>k18gen-073</b>	Multi-expert analysis and validation of objective vascular tortuosity measurements Dr. Lucía Ramos, Ms. María Álvarez, Dr. Jorge Novo, Dr. Marcos Ortega, Ms. Stephanie Romeo, Dr. José Rouco
<b>k18gen-085</b>	GPU Cuda JSEG Segmentation Algorithm associated with Deep Learning Classifier for Electrical Network Images Identification Msc Francisco Fambrini, Professor Luis Mariano Del Val Cura, Professor João Batista Destro-filho, Professor José Hiroki Saito
<b>k18gen-088</b>	Noninvasive Detection of Potentially Precancerous Lesions of Vocal Fold Based on Glottal Wave Signal and SVM Approaches Dr. Anis Ben Aicha
<b>k18gen-092</b>	A study of some fast inpainting methods with application to iris reconstruction Lecturer Doctor Anca Ignat, Student Alexandru Vasiliu



**G2E: Intelligent Applications**

Chair: Dr Yulia Hicks

Wednesday 5 Sept: 14.00-16.00

Ivo Andric Ballroom B

<b>PROSE Paper No</b>	<b>Paper Title / Authors</b>
<b>k18gen-097</b>	A common-sense based system for Geo-IoT Phd Student Ruben Cantarero, Full Professor Juan C. López, Phd Student Ana Rubio, Phd Student Cristian Trapero, Phd David Villa, Phd Felix J. Villanueva
<b>k18gen-102</b>	Emotional Influences on Cryptographic Key Generation Systems using EEG signals Mr Dang Nguyen, Dr Wanli Ma, Dr Dharmendra Sharma, Dr Dat Tran
<b>k18gen-108</b>	A robust anisotropic edge detection method for carotid ultrasound image processing Phd José Rouco, Md Elsa Azevedo, Phd Aurélio Campilho, Phd Catarina Carvalho, Msc Ana Domingues
<b>k18gen-110</b>	Using the hybrid ILS/VND method for solving the patients scheduling problem in emergency department: a case study Phd Student Marwa Harzi, Professor Jean-françois Condotta, Professor Saoussen Krichen, Associate Professor Issam Nouaouri
<b>k18gen-111</b>	An unsupervised classification approach for hyperspectral images based adaptive spatial and spectral neighborhood selection and graph clustering Ms Manel Ben Salem, Pr Med Salim Bouhlef, Dr Karim Saheb Ettabaa
<b>k18gen-113</b>	Topological Mapping of Neurons using Activities Detected in MEA Recording Signals Master Jose Roberto Campos, Master Francisco Fambrini, Phd João Fernando Mari, Phd Eduardo Rafael Lappa Rodriguez, Phd Jose Hiroki Saito, Phd Luis Mariano Val Cura

**G2F: Intelligent Applications**

Chair: Dr Matteo Cristani

Wednesday 5 Sept: 14.00-16.00

Nikola Tesla Ballroom A

<b>PROSE Paper No</b>	<b>Paper Title / Authors</b>
<b>k18gen-121</b>	Agent execution platform dedicated to C-ITS Phd Student Chadha Zarari, Professor Flavien Balbo, Professor Khaled Ghedira
<b>k18gen-125</b>	It could rain: weather forecasting as a reasoning process Dr. Matteo Cristani, Mr. Francesco Domenichini, Dr. Francesco Olivieri, Dr. Claudio Tomazzoli, Dr. Margherita Zorzi
<b>k18gen-055</b>	DKDOnto: An Ontology to Support Software Development with Distributed Teams Dr. Rodrigo Rocha,

**G3A: Emergent Intelligent Technologies**

Chair: Prof Ron Hartung

Monday 3 Sept: 11.00-13.00

Nikola Tesla Ballroom A

<b>PROSE Paper No</b>	<b>Paper Title / Authors</b>
<b>k18gen-002</b>	Cross-domain Meta-learning for Time-series Forecasting Mr Abbas Ali, Dr Marcin Budka, Dr Bogdan Gabrys
<b>k18gen-020</b>	Semantic Web Service Composition based on Graph Search Ms. Tucur Liana, Mr Paul Diac
<b>k18gen-031</b>	Tutoring In Project-Based Learning Ms Sonia Amamou, Mrs Lilia Cheniti
<b>k18gen-039</b>	Hand gesture recognition method based on HOG-LBP features for mobile devices Phd Student Housseem Lahiani, Associate Professor Mahmoud Neji
<b>k18gen-045</b>	Cloud SLA Terms Analysis Based On Ontology Student Taher Labidi, Professor Faiez Gargouri, Doctor Achraf Mtibaa
<b>k18gen-054</b>	A Comparative Study of Blind Source Separation for Bioacoustics Sounds based on FastICA, PCA and NMF Assoc. Prof. Dr. Dzati Athiar Ramli, Ms Norsalina Hassan

**G3B: Emergent Intelligent Technologies**

Chair: Prof Ron Hartung

Tuesday 4 Sept: 11.00-13.00

Nikola Tesla Ballroom A

<b>PROSE Paper No</b>	<b>Paper Title / Authors</b>
<b>k18gen-068</b>	Sharpness Enhancement of Finger-Vein Image Based on Modified Unsharp Mask with Log-Gabor Filter Associate Prof. Dr. Dzati Athiar Ramli, Mr. Amir Hajian
<b>k18gen-069</b>	Towards Mapping the Security Challenges of the Internet of Things (IoT) Supply Chain Dr. Tope Omitola, Dr. Gary Wills
<b>k18gen-086</b>	An Enhanced xAPI Data Model Supporting Assessment Analytics Phd Student Azer Nouira, Professor Rafik Braham, Assistant Professor Lilia Cheniti-belcadhi
<b>k18gen-089</b>	Spark-based data analytics of sequence motifs in large omics data Prof.dr. Carson Leung, Prof. Adebayo Adetunmbi, Dr Oluwafemi Sarumi
<b>k18gen-096</b>	Fast Spatial Spectral Schroedinger Eigenmaps algorithm for hyperspectral feature extraction PhD Student Asma Fejjari, Professor Ouajdi Korbaa, Doctor Karim Saheb Ettabaa
<b>k18gen-100</b>	A semantic approach for constructing valid composition scenarios of linguistic Web services. Phd Student Mariem Neji, Assistant Bilel Gargouri, Professor Mohammed Jmaiel
<b>k18gen-101</b>	2D Parallel Architecture for Morphological Operators Supporting Multiple Shaped Structuring Elements Phd Student Hajer Elloumi, Assistant Professor Mohamed Krid, Professor Dorra Sellami

**G3C: Emergent Intelligent Technologies**

Chair: Prof Ron Hartung

Tuesday 4 Sept: 15.30-17.30

Nikola Tesla Ballroom A

<b>PROSE Paper No</b>	<b>Paper Title / Authors</b>
<b>k18gen-114</b>	Walking Direction Estimation for Gait Based Applications Phd Student Imen Chtourou, Assistant Professor Emna Fendri, Associate Professor Mohamed Hammami
<b>k18gen-118</b>	An approach to evaluate adherence to the theme and the argumentative structure of essays D.sc. Aluizio Haendchen, D.sc. Hercules Do Prado, Ph.d. Edilson Ferneda, Mr. Jonathan Nau
<b>k18gen-124</b>	Development of a Check Sheet for Code-review towards Improvement of Skill Level of Novice Programmers Dr. Shinichi Oeda, Mr. Hajime Kosaku
<b>k18gen-129</b>	A New Method For Rules Dependency Extraction Ms Abir Boujelben, Ms Ikram Amous

**T1A: Knowledge Technology**

Chair: Prof Anne Hakansson

Wednesday 5 Sept: 9.30-11.30

Nikola Tesla Ballroom A

<b>PROSE Paper No</b>	<b>Paper Title / Authors</b>
<b>k18gen-008</b>	Representing network knowledge using provenance-aware formalisms for cyber-situational awareness Dr. Leslie Sikos, Dr. Catherine Howard, Dr. Wolfgang Mayer, Mr. Dean Philp, Professor Markus Stumptner, Mr. Shaun Voigt
<b>k18gen-036</b>	An Ontology-driven MapReduce Framework for Association Rules Mining in Massive Data. Phd Student Rania Mkhinini Gahar, Assistant Professor Olfa Arfaoui, Full Professor Nejib Ben Hadj-alouane, Associate Professor Minyar Sassi Hidri
<b>k18gen-050</b>	A Semantic Approach for Tweet Categorization Ben Ltaifa Ibtihel Ben Ltaifa, Ben Jemaa Maher Ben Jemaa, Hlaoua Lobna Hlaoua
<b>k18gen-091</b>	Customization of multi-tenant learning process as a service with Business Process Feature Model Phd Azouzi Sameh, Associate Professor Ayachi Ghannouchi Sonia, Assistant Professor Brahmi Zaki
<b>k18gen-120</b>	Refined cloud services discovery based on user model including privacy-preserving access control Phd Student Sarra Abidi, Doctor Mehrez Essafi, Doctor Myriam Fakhri, Professor Henda Hajjami Ben Ghezala
<b>k18gen-122</b>	Data analytics on the board game Go for the Discovery of interesting move sequences Prof.dr. Carson Leung, Dr Alfredo Cuzzocrea, Dr Felix Kanke

## Presentation Schedule – Invited Sessions

### ***S1A: Symposium on Information Systems and Technologies for Management, Economy and Decision Making***

Chair: Dr Jarosław Wątróbski

Tuesday 4th Sept: 11.00-13.00

Nikola Tesla Ballroom B

<b>PROSE Paper No</b>	<b>Paper Title / Authors</b>
<b>k18is-027</b>	The improvement of data in pairwise comparison matrices Dr Jacek Szybowski
<b>k18is-116</b>	A study on existing and actually used capabilities of mobile technologies Dr Grzegorz Szyjewski, Dr Luiza Fabisiak
<b>k18is-122</b>	TOPSIS and VIKOR methods in study of sustainable development in the EU countries Phd Mateusz Piwowarski, Associate Professor Malgorzata Tarczynska-luniewska, Associate Professor Mariusz Borawski, Associate Professor Danuta Miłaszewicz, Associate Professor Kesra Nermend
<b>k18is-154</b>	Analysis of e-Banking Websites' Quality with the Application of the TOPSIS Method ? A Practical Study Prof Witold Chmielarz, Phd Marek Zborowski
<b>k18is-171</b>	The construction of fundamental portfolio with the use of multivariate approach Prof. Waldemar Tarczynski, Assoc. Prof. Malgorzata Tarczynska-luniewska
<b>k18is-177</b>	On Analysis of e-Banking Websites Quality? Comet Application Prof Witold Chmielarz, Phd Marek Zborowski

## ***S1B: Symposium on Information Systems and Technologies for Management, Economy and Decision Making***

Chair: Dr Jarosław Wątróbski

Tuesday 4th Sept: 15.30-17.30

Nikola Tesla Ballroom B

<b>PROSE Paper No</b>	<b>Paper Title / Authors</b>
<b>k18is-179</b>	The procedure of building stable fundamental data base with the use of Matlab software Assoc. Prof. Malgorzata Tarczynska-luniewska
<b>k18is-180</b>	ANP-based analysis of ICT usage in Central European enterprises Dr. Piotr Sulikowski, Dr. Jaroslaw Becker, Dr. Aneta Becker, Dr. Piotr Sulikowski, Dr. Tomasz Zdziebko
<b>k18is-193</b>	Using the COMET Method in the Sustainable City Transport Problem: an Empirical Study of the Electric Powered Cars Dr. Wojciech Sałabun, Phd Artur Karczmarczyk
<b>k18is-049</b>	Knowledge Resources Development Process In Business Process Outsourcing (BPO) Organizations Prof. (associate) Przemysław Różewski, Master Of Science Piotr Janaszekiewicz, Master Of Science Justyna Krysińska, Master Of Science Marcin Prys
<b>k18is-050</b>	Text Summarization For Storytelling: Formal Document Case Prof. (associate) Przemysław Różewski, Master Of Science Piotr Janaszekiewicz, Phd Magdalena Kieruzel, Master Of Science Justyna Krysińska, Phd Tomasz Lipczyński, Master Of Science Marcin Prys
<b>k18is-056</b>	System analysis of human capital for information system development Prof. (associate) Przemysław Różewski, Master Of Science Piotr Janaszekiewicz, Master Of Science Justyna Krysińska, Master Of Science Marcin Prys, Master Of Science Paweł Winiecki



## ***S1C: Symposium on Information Systems and Technologies for Management, Economy and Decision Making***

Chair: Dr Jarosław Wątróbski

Wednesday 5th Sept: 09.30-11.30

Nikola Tesla Ballroom B

<b>PROSE Paper No</b>	<b>Paper Title / Authors</b>
<b>k18is-061</b>	Determinants of Using Project Management in The Implementation of Information Systems Prof Witold Chmielarz, PhD Marek Zborowski
<b>k18is-067</b>	Cybersecurity best practices among Polish students Dr Oskar Szumski,
<b>k18is-098</b>	Potentials of changing customer needs in a digital world - a conceptual model and recommendations for action in tourism M.Sc. (Univ.) Christopher Reichstein, Prof. Dr. Ralf-christian Härting
<b>k18is-112</b>	Human-website interaction monitoring in recommender systems Dr. Piotr Sulikowski, Dr. Eliaz Kańtoch, Asst. Dominik Turzyński, Dr. Tomasz Zdziebko
<b>k18is-115</b>	The Concept of Virtual Reality System to Study the Media Message Effectiveness of Social Campaigns Dr. Anna Borawska, Prof. Malgorzata Tarczyska-luniewska, Prof. Mariusz Borawski

## ***S1D: Symposium on Information Systems and Technologies for Management, Economy and Decision Making***

Chair: Dr Jarosław Wątróbski

Wednesday 5th Sept: 14.00-16.00

Nikola Tesla Ballroom B

<b>PROSE Paper No</b>	<b>Paper Title / Authors</b>
<b>k18is-118</b>	A New Model for Respected Meetings Dr. Ahmet Demir, Dr. Ihsan Bulut
<b>k18is-130</b>	Selected problems of contemporary research on behavior Prof. Zdzisław Szyjewski, Phd Joanna Szyjewska-bagińska
<b>k18is-132</b>	Mining Neuroscience Data for Social Campaign Evaluation Dr. Anna Borawska
<b>k18is-152</b>	EEG in analysis of the level of interest in social issue advertising Phd Mateusz Piwowarski
<b>k18is-163</b>	Representation of Events and Rules in Gamification Systems Dr Jakub Swacha,
<b>k18is-181</b>	Communication maturity model for organizations realizing EU projects Ph.d. Karolina Muszyńska
<b>k18is-192</b>	An Attempt to Knowledge Conceptualization of Methods and Tools Supporting Ontology Evaluation Process Phd Jaroslaw Watróbski

## ***IS01: Interdisciplinary Approaches in Data Science and Business Intelligence Practice (IADBIP 2018)***

Chair: Prof Ivan Luković

Monday 3 Sept: 11.00-13.00

Nikola Tesla Ballroom C

<b>PROSE Paper No</b>	<b>Paper Title / Authors</b>
<b>k18is-051</b>	Data Analytics Systems and SME type - A Design Science Approach Prof. Dr. Patrick Ulrich, Prof. Dr. Dr. Wolfgang Becker, M.sc. Alexandra Fibitz, M.sc. Eva Reitelshöfer, M.sc. Felix Schuhknecht
<b>k18is-070</b>	Hardcore Gamer Profiling: Results from an unsupervised learning approach to playing behavior on the Steam platform Student Florian Baumann, Phd Student Hermann Baumgartl, Prof. Dr. Ricardo Buettner, Student Florian Emmert
<b>k18is-101</b>	Potentials of Digital Business Models ? Empirical investigation of data driven impacts in industry Prof. Dr. Ralf-christian Härting, M.sc. (univ.) Christopher Reichstein, B.a. Matthias Schad
<b>k18is-103</b>	National university rankings based on open data: A case study from Serbia Mr Vladimir Ivančević, Prof. Dr Ivan Luković
<b>k18is-119</b>	Near Real-time Autonomous Quality Control for Streaming Environmental Sensor Data Mr. Connor Scully-allison, Dr. Sergiu Dascalu, Mr. Eric Fritzinger, Dr. Frederick Harris Jr., Mr. Vinh Le, Dr. Scotty Strachan

***ISO2A: Knowledge Engineering in Large-Scale Systems***

Chair: Dr Sergey Zykov

Monday 3 Sept: 11.00-13.00

Plato Room

<b>PROSE Paper No</b>	<b>Paper Title / Authors</b>
<b>k18is-002</b>	Software System in Waterloop Pod Ms Dinara Nikolaeva, Ph. D. Rinat Idiyatullin, Bh Ruslan Nikolaev
<b>k18is-053</b>	Application of artificial intelligence methods to recognize pathologies on medical images Prof Georgy Lebedev, Mr Alexander Gromov, Mr Sergey Kachkovskiy, Mr Herman Klimenko, Mr Vadim Konushin, Mr Ilya Ryabkov
<b>k18is-054</b>	Features of the diagnostic information processing for congenital lung malformations in newborns for the automated analysis and surgical navigation systems. Mr Gleb Nemkovskiy, Dr Dmitry Degtyarev, Dr Elena Dorofeeva, Ms Alina Kozlova, Mr Aleksey Prohin, Dr Ulyana Tumanova
<b>k18is-059</b>	The original technique of the collection and adaptation different types of diagnostic information for congenital urinary malformations in newborns for the systems of automated analysis of three-dimensional images and surgical navigation Mr Gleb Nemkovskiy, Mr Ivan Balashov, Dr Vladimir Bychenko, Mr Pavel Kozhin, Dr Yulia Podurovskaya, Mr Alexey Prohin
<b>k18is-062</b>	Application of a prospective assisted reproductive technologies register for calculating the probability of pregnancy Prof Georgy Lebedev, Mr Vladimir Bondarenko, Dr Alexey Kholin, Mr Oleg Malyarenko, Prof Marina Shakhova, Prof Sergey Zykov
<b>k18is-072</b>	Digital technologies to improve effectiveness of pharmacotherapy Dr. Konstantin Koshechkin, Dr. Alexander Polikarpov, Dr. Georgiy Radzievsky

***IS02B: Knowledge Engineering in Large-Scale Systems***

Chair: Dr Sergey Zykov

Tuesday 4 Sept: 11.00-13.00

Plato Room

<b>PROSE Paper No</b>	<b>Paper Title / Authors</b>
<b>k18is-075</b>	Scope for the Application of Blockchain in the Public Healthcare of the Russian Federation Dr Konstantin Koshechkin, Dr German Klimenko, Dr Pavel Kozhin, Dr Ilya Ryabkov
<b>k18is-133</b>	Applicative-based automatic configuration management for virtual machines Dr. Sergey Zykov, Dr. Leonid Shumsky, Prof. Alexander Tormasov, - Anatoly Tykushin
<b>k18is-145</b>	Item-Centric Mining of Frequent Patterns from Big Uncertain Data Prof. Alfredo Cuzzocrea, Prof. Carson Leung

***IS03: Intelligent Transportation Systems***

Chair: Dr Milan Simic

Monday 3 Sept: 11.00-13.00

Aristotle Room

<b>PROSE Paper No</b>	<b>Paper Title / Authors</b>
<b>k18is-001</b>	Autodriver Autonomous Vehicles Control Strategy Professor Reza Jazar, Senior Lecturer Hamid Khayyam, Lecturer Hormoz Marzbani, Senior Lecturer Milan Simic, Lecturer Ching Nok To, Lecturer Dai Vo Quoc
<b>k18is-151</b>	Motor imagery based EEG features visualization for BCI applications Ms Madiha Tariq, Dr Milan Simic, Prof Pavel Trivailo
<b>k18is-170</b>	Enhancing the User Experience With Vertical Transportation Solutions Dr Maria Spichkova, Mr Peng Chen, Mr Alber Christianito, Mr Jun Feng, Ms Annie Vuong, Ms Osheen Walawedura

**IS04: Data Science for Big Data**

Chair: Prof Katsutoshi Yada

Monday 3 Sept: 11.00-13.00

Aristotle Room

<b>PROSE Paper No</b>	<b>Paper Title / Authors</b>
<b>k18is-023</b>	Incentive Mechanism of Medical Data Provider of Health Data Bank Prof. Lindu Zhao, Ms. Jianxia Gong, Ms. Lijun Zhou
<b>k18is-136</b>	Framework of highly secure transaction management for affiliate services of video advertising Prof. Motoi Iwashita, Prof. Shigeaki Tanimoto, Ms. Kana Tsuchiya
<b>k18is-153</b>	Implementing Multi-Robot Cafe by PRINTEPS with Service Quality Dimensions Dr. Takeshi Morita, Ms. Naho Kashiwagi, Prof. Dr. Hideo Suzuki, Prof. Dr. Takahira Yamaguchi, Dr. Ayanori Yorozu

***IS07A: Numerical Modelling and Recognition Techniques***

Chair: Prof Margarita Favorskaya

Tuesday 4 Sept: 11.00-13.00

Lavender Room

<b>PROSE Paper No</b>	<b>Paper Title / Authors</b>
<b>k18is-005</b>	Modelling the non-stationary videos for performance assessment of frame reconstruction Prof. Margarita Favorskaya, Dr. Vladimir Buryachenko
<b>k18is-010</b>	No-reference quality assessment of blurred frames Prof. Margarita Favorskaya, Phd Alexander Proskurin
<b>k18is-035</b>	Use of symmetric Hadamard and Mersenne matrices in digital image processing Dr. Anton Vostrikov, Prof. Nikolaj Balonin, Mr. Alexander Sergeev, Prof. Mikhail Sergeev
<b>k18is-038</b>	Two approaches to the calculation of air subdomains: theoretical estimation and practical results Dr Alena Favorskaya, Dr Vasiliy Golubev, Dr Nikolay Khokhlov
<b>k18is-039</b>	Explanation the difference in destructed areas simulated using various failure criteria by the wave dynamics analysis Dr Alena Favorskaya, Dr Vasiliy Golubev, PhD Student Daniil Grigorievyh
<b>k18is-040</b>	Modeling the impact of wheelsets with flat spots on a railway track Dr Alena Favorskaya, Dr Nikolay Khokhlov



***IS07B: Numerical Modelling and Recognition Techniques***

Chair: Prof Margarita Favorskaya

Tuesday 4 Sept: 15.30-17.30

Lavender Room

<b>PROSE Paper No</b>	<b>Paper Title / Authors</b>
<b>k18is-041</b>	The use of multiple waves to obtain information on an underlying geological structure Dr Alena Favorskaya
<b>k18is-065</b>	MRI Brain's Tumor Edge Detection Based on Fuzzy C-Means PhD Mikhail Kurako, PhD student Yousif Hamad, assoc. prof. Svetlana Kirillova, prof. Konstantin Simonov, assoc. prof. Alexander Zotin
<b>k18is-068</b>	Numerical simulation of destruction processes by the grid-characteristic method Dr Vasily Golubev, Dr Alena Favorskaya, PhD Student Daniil Grigorievych, Dr Nikolay Khokhlov
<b>k18is-095</b>	Verification and Online Updating of Decision Making Control Logic for Onboard Real-Time Control Systems Prof. Andrey Tyugashev, Rector Dmitrii Zheleznov
<b>k18is-113</b>	Environmental risk zones mapping using satellite monitoring data PhD Mikhail Kurako, Prof. Valentin Kashkin, Prof. Konstantin Simonov, Assoc. Prof. Alexander Zotin, Phd Dmitriy Zuev
<b>k18is-064</b>	Some Aspects on Complementarity and Heterodoxy in Non-Classical Logics Dr Jair Abe, Phd Seiki Akama, Dr João Inácio Da Silva Filho, Phd Kazumi Nakamatsu

***IS09: Networks for Innovation, Knowledge Creation and Sharing***

Chair: Prof Shuichiro Yamamoto

Monday 3 Sept: 11.00-13.00

Lavender Room

<b>PROSE Paper No</b>	<b>Paper Title / Authors</b>
<b>k18is-045</b>	Proposal of Integrated Reference Model For Realization of Dream and Transformation Dr. Ryu Katayama
<b>k18is-047</b>	A Composite Dependability for Enterprise Architecture Dr. Shuichiro Yamamoto, Dr. Shuji Morisaki, Phd Student Qiang Zhi
<b>k18is-055</b>	Two-Stage Third-Party Review Proposal In SoftWare Development Manager Haruhiro Tsuchiya, Software Engineer Naoko Kobayashi, Software Engineer Yuko Murakami, Software Engineer Jiaqi Wan, Professor Dr. Shuichiro Yamamoto, Software Engineer Tomoyuki Yanagisawa
<b>k18is-063</b>	Meta-Requirements for Information System Requirements: Lesson Learned from Software Ecosystem Researches Prof. Haruhiko Kaiya
<b>k18is-024</b>	Obtaining Exhaustive Answer Set for Q&A-based Inquiry System using Customer Behavior and Service Function Modeling Dr. Hironori Takeuchi, Mr. Shiki Akihara, Dr. Satoshi Masuda, Mr. Kohtaroh Miyamoto

***IS10: Knowledge and data engineering in medicine and health care***

Chair: Prof Wieslaw Paja

Monday 3 Sept: 11.00-13.00

22 Restaurant

<b>PROSE Paper No</b>	<b>Paper Title / Authors</b>
<b>k18is-022</b>	Research on Hybrid Information Evaluation Type Watching Technology for the Improvement of QOL of the Elderly Dr. Jun Sawamoto, Dr. Manabu Kurosawa, Dr. Yoji Taniguchi, Mr. Kota Watanabe, Dr. Hiroshi Yajima
<b>k18is-036</b>	On the development of an open and collaborative bioinformatics research environment Prof. Nikos Karacapilidis, Dr. Alexandros Kanterakis, Dr. Lefteris Koumakis, Dr. George Potamias
<b>k18is-169</b>	Determining Importance of Ranges of MMPI Scales Using Fuzzification and Relevant Attribute Selection Dr Krzysztof Pancerz, Mr Jerzy Gomula, Dr Wieslaw Paja, Mr Jaromir Sarzynski
<b>k18is-176</b>	Experiments with Consistency-Based Preprocessing of MMPI Data for Classification Tasks Dr Krzysztof Pancerz, Mr Jerzy Gomula

### ***IS11: Metaheuristics and multiagent models for flexible manufacturing systems***

Chair: Dr. Olfa Belkahla Driss

Wednesday 5th Sept: 14.00-16.00

Plato Room

<b>PROSE Paper No</b>	<b>Paper Title / Authors</b>
<b>k18is-085</b>	An effective heuristic for the single-machine scheduling problem with flexible maintenance under human resource constraints Mrs Meriem Touat, Mrs Fatima Benbouzid-Si Tayeb, Mr Belaid Benhamou
<b>k18is-088</b>	Solving Distributed and Flexible Job shop Scheduling Problem using a Chemical Reaction Optimization metaheuristic Mr Bilel Marzouki, Dr Olfa Belkahla Driss, Pr Khaled Ghedira
<b>k18is-102</b>	Dual-Resource Constraints in Classical and Flexible Job Shop Problems: A State-of-the-Art Review Student Mondher Dhiflaoui, Dr. Olfa Belkahla Driss, Dr. Housseem Eddine Nouri

***IS12: Contemporary issues in Computer education***

Chair: Prof Hiroko Kanoh

Tuesday 4th Sept: 11.00-13.00

22 Restaurant

<b>PROSE Paper No</b>	<b>Paper Title / Authors</b>
<b>k18is-026</b>	An Interval-Type Autocorrelated Fuzzy Time-Series Model Used Other Fuzzification and Its Sequential Reconstruction Prof Yoshiyuki Yabuuchi
<b>k18is-032</b>	Investigation into Parents' Concerns about the Introduction of Programming Education into Japanese Primary School Ms Yukiko Maruyama
<b>k18is-079</b>	Experiences and perspectives of Technology-enhanced learning and teaching in higher education ? Serbian case Prof. Mirjana Ivanovic;, Dr Veljko Aleksić, Mrs Brankica Bratić, Dr Aleksandra Klasnja Milićević, Dr Mandić Milinko
<b>k18is-124</b>	Why do people believe in fake news over the Internet? An understanding from the perspective of existence of the habit of eating and drinking Prof. Hiroko Kanoh
<b>k18is-161</b>	Analysis and classification of university students' educational skills using a computer-assisted web-interviewing questionnaire Dr. Tadanari Taniguchi, Dr. Kurita Daisuke, Dr. Yukiko Maruyama, Dr. Makoto Tanaka

***IS13: Chance Discovery and Market of Data***

Chair: Prof Akinori Abe

Monday 3 Sept: 11.00-13.00

Nikola Tesla Ballroom B

<b>PROSE Paper No</b>	<b>Paper Title / Authors</b>
<b>k18is-129</b>	The Difference between Variable-based and Context-based Networks of Data Using Data Jackets Dr. Hayashi Teruaki, Professor Ohsawa Yukio
<b>k18is-147</b>	Shift of perceived distance reflecting an organizational culture - revealing through multi-dimensional scaling method Professor Jun Nakamura, Professor Sanetake Nagayoshi
<b>k18is-158</b>	Tool for Extracting Latent Field Overseers' Knowledge for Risk Recognition on Eyes and Algorithm for Structuring Meta and Domain Knowledge from Utterances Prof. Kushiro Noriyuyki, Mr. Fujita Yuji, Mr. Aoyama Yusuke
<b>k18is-160</b>	How to determine the necessary knowledge in the inconsistent situation? Prof. Akinori Abe
<b>k18is-187</b>	Action research for improving the risk literacy of university students: Focusing on the effectiveness of risk communication using Crossroad game Prof. Yumiko Nara

***IS14: Cyber-Physical Systems and Applications***

Chair: Prof Anne Hakansson

Wednesday 5th Sept: 14.00-16.00

Nikola Tesla Ballroom C

<b>PROSE Paper No</b>	<b>Paper Title / Authors</b>
<b>k18is-141</b>	Contextual Knowledge to Enhance Workplace Hazard Recognition and Interpretation in a Cognitive Vision Platform Miss Catherine Silva De Oliveira, Doctor Cesar Sanin, Professor Edward Szczerbicki
<b>k18is-143</b>	From Knowledge based Vision Systems to Cognitive Vision Systems: A Review Ms. Thamiris Lorena De Souza Alves, Dr. Cesar Sanin, Ms. Catherine Silva De Oliveira, Professor Edward Szczerbicki
<b>k18is-173</b>	Ipsum - An Approach to Smart Volatile ICT-Infrastructures for Smart Cities and Communities Prof Anne Håkansson

***IS15: Computational Intelligence System and Applications***

Chair: Prof Yuji Iwahori

Tuesday 4th Sept: 11.00-13.00

Nikola Tesla Ballroom C

<b>PROSE Paper No</b>	<b>Paper Title / Authors</b>
<b>k18is-015</b>	Inventory Satisfaction Discrimination Method Utilizing Images and Deep Learning Professor Tsukasa Kudo, Mr. Tenma Kawanaka
<b>k18is-017</b>	A System for Japanese Listening Training Support with Watching Japanese Anime Scenes Student Junjie Shan, Associate Professor Yoko Nishihara, Assistant Professor Ryosuke Yamanishi
<b>k18is-031</b>	Statistical Study of the Sub-second Price Fluctuation in the 2nd Stage of the Arrowhead Market Professor Mieko Tanaka-yamawaki, Dr. Yumihiko Ikura, Professor Masanori Yamanaka
<b>k18is-093</b>	Detection of Words Accepted to Dynamic Abstracts Focusing on Local Variation of Word Frequency Ms. Haruna Mori, Asoc. Prof. Yoko Nishihara, Asoc. Prof. Ryosuke Yamanishi
<b>k18is-121</b>	Defect Classification of Electronic Board Using Dense SIFT and CNN Prof. Yuji Iwahori, Prof. Yoshinori Adachi, Dr. M. Bhuyan, Prof. Boonserm Kijirikul, Miss Tokiko Shiina, Mr. Yohei Takada
<b>k18is-058</b>	Physical and Behavioral Characterization of Human Groups Classified Using Symbolic Pattern Analysis Mr. Kosuke Shima, Prof. Nobuhiro Inuzuka, Prof. Koichi Moriyama, Prof. Atsuko Mutoh



***IS16A: Smart Education: Active Learning using ICT and e-Learning***

Chair: Prof Nobuyuki Ogawa

Wednesday 5th Sept: 09.30-11.30

Aristotle Room

<b>PROSE Paper No</b>	<b>Paper Title / Authors</b>
<b>k18is-012</b>	Virtual Workshop for Creative Teaching of STEM Courses Research Professor Dana Barry, Professor Hideyuki Kanematsu, Professor Katsuko Nakahira, Professor Nobuyuki Ogawa
<b>k18is-018</b>	A proposal of method to make active learning from class to self-study using active note taking and active textbook system Prof. Shin-nosuke Suzuki, Dr. Yutaro Akimoto, Prof. Manabu Ishihara, Ms Ryohei Kameyama, Dr. Yasuhiro Kobayashi, As Masaya Yamaguchi
<b>k18is-028</b>	Some Psychological Responses Measured by a Commercial Electrooculography Sensor and Its Applicability Dr. Hideyuki Kanematsu, Dr. Dana Barry, Prof. Katsuko Nakahira, Dr. Nobuyuki Ogawa, Prof. Tatsuya Shirai, Dr. Michiko Yoshitake
<b>k18is-030</b>	Behind benefits of using an automated exercise creation system Phd Kalle Saastamoinen, Phd Antti Rissanen
<b>k18is-034</b>	Pilot considerations of brain activity detection based on difference of English words difficulty levels at recognition of English words Mr. Tatsuya Sasaki, Prof. Yoritaka Akimoto, Prof. Katsuko Nakahira

***IS16B: Smart Education: Active Learning using ICT and e-Learning***

Chair: Prof Nobuyuki Ogawa

Wednesday 5th Sept: 14.00-16.00

Aristotle Room

<b>PROSE Paper No</b>	<b>Paper Title / Authors</b>
<b>k18is-110</b>	English writing eportfolio for university STEM majors Dr. Sunao Fukuanga
<b>k18is-157</b>	Active Learning Strategy at a Collegewide Level in NIT, Gifu College Prof. Ph.d. Nobuyuki Ogawa
<b>k18is-172</b>	Active Learning on Digital Marketing for Advertising A University Museum Exhibition Professor Toshiki Ueda, Professor Ban Hiroshi

***IS17: Human factors for communication & intelligent systems***

Chair: Dr Atsuko Yamazaki

Tuesday 4th Sept: 15.30-17.30

Nikola Tesla Ballroom C

<b>PROSE Paper No</b>	<b>Paper Title / Authors</b>
<b>k18is-003</b>	Raising driver attentiveness with unconscious learning effect Professor Toshio Ito, Student Shuji Sudo
<b>k18is-080</b>	Effects of facial expressions on impression evaluation for Japanese stuttering voices Professor Atsuko Yamazaki, Mr. Muhammad Nur Adilin Anuardi, Mr. Kazukiyo Inada, Mr. Noriaki Miwa, Mr. Mashu Sanjo
<b>k18is-109</b>	Human Knowledge in Constructing AI Systems -- Neural Logic Networks Approach towards an Explainable AI Professor Liya Ding
<b>k18is-126</b>	Development of web-based learning materials to support assisting-skill acquisition using 3DCG Dr. Kaoru E, Dr. Hiroshi Matsuda, Ms. Hiranchiracheep Suopor, Dr. Hiroshi Takase, Dr. Atsuko Yamazaki, Ms. Hiroko Yoshida
<b>k18is-142</b>	Comparisons of the Effects of Three Background Colours on Brain Functioning and Task Performance Mr. Muhammad Nur Adilin Mohd Anuardi, Prof. Kaoru Eto, Prof. Atsuko K. Yamazaki

***IS18: Immunity-Based Systems: Resilient Computing for IoT***

Chair: Prof Yoshiteru Ishida

Wednesday 5th Sept: 14.00-16.00

Lavender Room

<b>PROSE Paper No</b>	<b>Paper Title / Authors</b>
<b>k18is-086</b>	Implementation and evaluation of an immunity-enhancing module for ISC BIND9 Dr Takeshi Okamoto, Mr Mitsunobu Tarao
<b>k18is-189</b>	Fake News and their Credibility Evaluation by Dynamic Relational Networks: A Bottom Up Approach Prof. Dr. Yoshiteru Ishida, Ms. Sanae Kuyara
<b>k18is-197</b>	SCORMAdaptiveQuiz: A Implementation of Adaptive e-Learning for Moodle Dr. Hiroshi Ueda, Ms. Masako Furukawa, Dr. Motonori Nakamura, Dr. Kazutsuna Yamaji

## ***IS19: Information Technology Applications in Data Analytics and Software Development***

Chair: Dr Gongzhu Hu

Tuesday 4th Sept: 15.30-17.30

Plato Room

<b>PROSE Paper No</b>	<b>Paper Title / Authors</b>
<b>k18is-004</b>	Genetic Algorithm Analysis using the Graph Coloring Method for Solving the University Timetable Problem Dr. Ramzi Haraty, Ms. Maram Assi, Ms. Bahia Halawi
<b>k18is-037</b>	Impacts of Temperature and Humidity variations on RSSI in indoor Wireless Sensor Networks M.sc. Dipl.-ing. Amir Guidara, Prof. Dr.-ing. Maher Ben Jemaa, Prof. Dr.-ing. Faouzi Derbel, Dr.-ing. Ghofrane Fersi
<b>k18is-107</b>	Preserving the Correctness of Dynamic Workflows within a Cloud Environment Phd Fairouz Fakhfakh, Phd Faten Fakhfakh, Dr Hatem Hadj Kacem, Prof Ahmed Hadj Kacem
<b>k18is-108</b>	Formal Verification Approaches for Distributed Algorithms: A Systematic Literature Review Phd Student Faten Fakhfakh, Prof Ahmed Hadj Kacem, Prof Mohamed Mosbah, Dr Mohamed Tounsi
<b>k18is-120</b>	An Educational Science Ride Using a Motion Flight Simulator Platform Professor Sergiu Dascalu, Student Alexander Redei
<b>k18is-144</b>	An ontology-based monitoring system for multi-source environmental observations Mrs Maroua Masmoudi, Mr Bernard Archimede, Mrs Hajer Baazaoui Zghal, Mrs Sana Ben Abdallah Ben Lamine, Mr Mohamed Hedi Karray

***IS20A: Knowledge-Based Systems for e-Business***

Chair: Prof Kazuhiko Tsuda

Tuesday 4th Sept: 11.00-13.00

Aristotle Room

<b>PROSE Paper No</b>	<b>Paper Title / Authors</b>
<b>k18is-071</b>	A Study on Delivery Evaluation under Asymmetric Information in the Mail-order Industry Dr. Prof. Masakazu Takahashi, Dr. Hiroaki Azuma, Dr. Prof. Kazuhiko Tsuda
<b>k18is-076</b>	Contribution to Purchase Behavior of Voluntary Search Compared to Web Advertisement Mr. Takumi Kato, Prof. Kazuhiko Tsuda
<b>k18is-077</b>	Method of extracting a relation between impact of newspaper article and stock price Mr. Daisuke Katayama, Prof. Kazuhiko Tsuda
<b>k18is-081</b>	A Management Method of the Corporate Brand Image Based on Customers' Perception Mr. Takumi Kato, Prof. Kazuhiko Tsuda
<b>k18is-083</b>	Conceptual Modeling supported by Text Analysis Dr. Yasunobu Kino,
<b>k18is-092</b>	Prediction of Broadband Spectrum Utilization Data for Spectrum Sharing Dr. Nobuo Suzuki, Mr. Tatsuya Yoshioka

***IS20B: Knowledge-Based Systems for e-Business***

Chair: Prof Kazuhiko Tsuda

Tuesday 4th Sept: 15.30-17.30

Aristotle Room

<b>PROSE Paper No</b>	<b>Paper Title / Authors</b>
<b>k18is-094</b>	Correlation analysis between customer's behaviour on website and actual purchase Mr Satoshi Yoshimaru, Mr Sakamoto Daisuke, Prof Tsuda Kazuhiko, Mr Yazawa Takehiko
<b>k18is-096</b>	Extraction method of the gap between the reputation of reviews and the maker strategy Dr. Yuko Taniguchi, Dr.prof. Kazuhiko Tsuda
<b>k18is-097</b>	Method of extracting appliance pricing factors in e-commerce Dr Tatsuya Ogura, Dr Prof Kazuhiko Tsuda
<b>k18is-105</b>	Social Listening System Using Sentiment Classification for Discovery Support of Hot Topics Ma Daisuke Sakamoto, Ma Naoki Matsushita, Ma Mitsumasa Noda, Prof. Kazuhiko Tsuda
<b>k18is-111</b>	Structured analysis of the evaluation process for adopting open-source software Mr. Shinji Akatsu, Dr. Yoshikatsu Fujita, Mr. Takumi Kato, Dr. Kazuhiko Tsuda

***IS23: New Generation Computing in Engineering, Life Science and Economy***

Chair: Dr Piotr Nikończuk

Tuesday 4th Sept: 15.30-17.30

22 Restaurant

<b>PROSE Paper No</b>	<b>Paper Title / Authors</b>
<b>k18is-073</b>	Fuzzy Matching of OpenAPI Described REST Services Mr. Cong Peng, Dr. Guohua Bai, Dr. Prashant Goswami
<b>k18is-078</b>	Vehicle Classification Based on Multiple Fuzzy C-Means Clustering Using Dimensions and Speed Features Mr Saleh Javadi, Dr. Mattias Dahl, Prof. Mats Pettersson, Mr Muhammad Rameez
<b>k18is-082</b>	Component Selection with Fuzzy Decision Making Mr Johan Silvander,
<b>k18is-162</b>	Fuzzy decision-making model with qualitative states and fuzzified outcomes Professor Elisabeth Rakus-andersson
<b>k18is-185</b>	Knowledge systematization for ontology learning methods Phd Agnieszka Konys,
<b>k18is-186</b>	Towards Knowledge Handling in Ontology-Based Information Extraction Systems Phd Agnieszka Konys



***IS26: Skill Acquisition and Ubiquitous Human Computer Interaction***

Chair: Prof Masato Soga

Wednesday 5th Sept: 9.30-11.30

Nikola Tesla Ballroom C

<b>PROSE Paper No</b>	<b>Paper Title / Authors</b>
<b>k18is-087</b>	Rolls of facilitator in collaborative active learning for relaxing life Professor Taizo Miyachi, Researcher Takashi Furuhashi, Lecturer Saiko Iga
<b>k18is-114</b>	Towards an adaptable task model within an evolutionary environment Phd Jarraya Mouna, Prof Moussa Faouzi
<b>k18is-166</b>	Development of a AR Drawing System with Point Cloud Data suitable for Real-time Gripping Movement by using Kinect Ba Hiroki Inatome, Dr. Masato Soga
<b>k18is-167</b>	Analysis of brain activity in distance recognition Mr. Shohei Matsui, Dr. Noriyuki Matsuda, Dr. Hirokazu Miura, Dr. Masato Soga, Prof. Hirokazu Taki
<b>k18is-178</b>	Motion Comparison Learning Support Environment for Learner's Motion synchronized with Archived Target Expert's Motion Dr. Masato Soga, Ma Toshihiro Yoshinaga

***IS27: Signal and Image Processing Algorithms and Pattern Recognition Techniques for Automated Identification/Classification Systems***

Chair: Dr Paolo Crippa

Wednesday 5th Sept: 9.30-11.30

Plato Room

<b>PROSE Paper No</b>	<b>Paper Title / Authors</b>
<b>k18is-048</b>	A Fine-Tuned Convolution Neural Network Based Approach For Phenotype Classification Of Zebrafish Embryo Prof. Ishwar Sethi, Dr. Nilesh Patel, Gaurav Tyagi
<b>k18is-106</b>	I-vector Extraction for Speaker Recognition Based on Dimensionality Reduction Assoc. Prof. Dr. Dzati Athiar Ramli, Ms. Noor Salwani Ibrahim
<b>k18is-138</b>	Position recognition algorithm using a two-stage pattern classification set applied in sleep tracking Ms. Eva Rodriguez De Trujillo, Mr. Maksym Gaiduk, Dr. Ralf Seepold
<b>k18is-148</b>	An acquisition system of in-house parameters from wireless sensors for the identification of an environmental model Dr. Paolo Crippa, Dr. Giorgio Biagetti, Mr. Diego Coccia, Dr. Laura Falaschetti, Prof. Claudio Turchetti
<b>k18is-155</b>	A Comparative Study of Machine Learning Algorithms for Physiological Signal Classification Dr. Paolo Crippa, Dr. Giorgio Biagetti, Dr. Laura Falaschetti, Ms. Giulia Tanoni, Prof. Claudio Turchetti

***IS29A: Internet-of-Things and Intelligent Systems***

Chair: Prof Xiangpei Hu

Wednesday 5th Sept: 09.30-11.30

Lavender Room

<b>PROSE Paper No</b>	<b>Paper Title / Authors</b>
<b>k18is-123</b>	Reverse Logistic Network Optimization Research for Sharing Bikes Professor Xuping Wang, Master Honghui He, Master Mingming Zhao
<b>k18is-127</b>	Tactical Production and Distribution Planning in Urban Logistics under Vehicle Operational Restrictions Dr. Mu Du, Dr. Xiangpei Hu, Dr. Nan Kong, Dr. Lindu Zhao
<b>k18is-128</b>	Bundling Strategy and Channel Competition in Supply Chains with Complementary Products Associate Prof. Sijie Li, Assistant Prof. Lai Minghui, Associate Prof. Weili Xue
<b>k18is-135</b>	Pricing decisions and environmental assessment in a two-echelon supply chain with returnable transport items Prof. Lindu Zhao, Ms. Min Wang
<b>k18is-137</b>	Analysis of Two-Tier Healthcare Service Systems under Value-Based Competition in China Dr. Xinxin Guo, Prof. Haiyan Wang, M.s. Xuejiu Zhang
<b>k18is-140</b>	A qualitative knowledge representation model and application for crisis event Professor Jiangnan Qiu, Student Huayan Shi, Student Shuning Yang, Student Min Zuo

***IS29B: Internet-of-Things and Intelligent Systems***

Chair: Prof Xiangpei Hu

Wednesday 5th Sept: 14.00-16.00

Lavender Room

<b>PROSE Paper No</b>	<b>Paper Title / Authors</b>
<b>k18is-149</b>	Integrated optimization model of the urgent order distribution and delivery problem of online pharmacy Ms. Mengqi Yu, Prof. Xiangpei Hu, Mr. Yonggang Li, Ms. Yanling Zhuang
<b>k18is-150</b>	Modeling and verification of supervisory rules in IoT environment Dr. Tao Lu, Ms. Xinye Huo
<b>k18is-156</b>	Order batching and sequencing problem under the pick-and-sort strategy in online supermarkets Mr. Xiaowei Jiang, Prof. Xiangpei Hu, Prof. Lijun Sun, Doc. Yuankai Zhang, Mrs. Yaxian Zhou

***IS30: Intelligent Network Security and Digital Forensics***

Chair: Prof Oliver Popov

Wednesday 5th Sept: 14.00-16.00

Nikola Tesla Ballroom C

<b>PROSE Paper No</b>	<b>Paper Title / Authors</b>
<b>k18is-134</b>	Enhancing the Cyber Resilience of Critical Infrastructures through an Evaluation Methodology Based on Assurance Cases Ms Dorien Koelemeijer
<b>k18is-146</b>	Investigating the possibility of speeding up Mininet by using Netmap, an alternative Linux packet I/O framework Mr. Ulf Noring
<b>k18is-174</b>	A Methodology to Enhance Industrial Control System Security Mr. Dominic Timpson, Dr. Esmiralda Moradian



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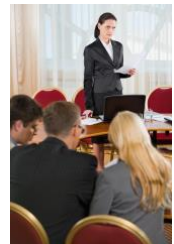


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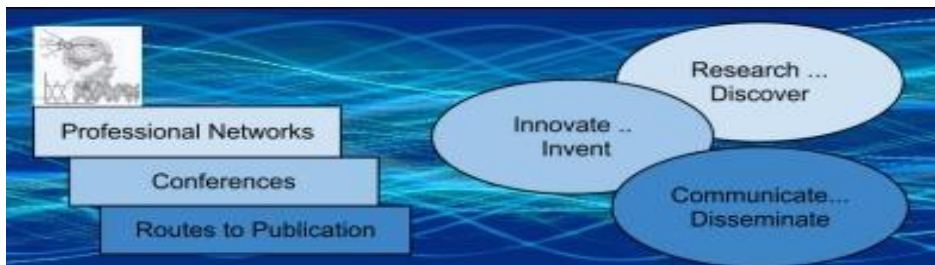
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# KES International – 2019 Conferences

## **SDF-19: 17-19 June 2019**

Smart Digital Futures 2019 brings you six of our most popular conferences on various aspects of intelligent systems including Innovation in Medicine & Healthcare (InMed19,) Intelligent Decision Technologies (IDT19) Intelligent Interactive Multimedia Systems & Services (IIMSS19), Agent & Multi-agent Systems (AMSTA19), Smart Education & E-Learning (SEEL19) and Smart Transportation Systems (STS19) on the stunning island of Malta. It will feature a unique and exciting social programme.



## **SST-19: 3-5 July 2019**

Smart sustainable technologies 2019 KES's dual themed conference incorporating:

- Sustainability in Energy and Buildings (SEB-19)
- Sustainable Design and Manufacturing (SDM-19)

Will be held at the stunning **4\*** **Superior Danubius Health Spa Resort**, which sits on the beautiful Margaret Island, Budapest.



## **KES-2019: 3-6 September 2019**

We are delighted to announce that 23rd International Conference on Knowledge Based and Intelligent information and Engineering Systems (KES2019) will be held at the **4\* Superior Danubius Health Spa Resort** on 'The spa island of Budapest' situated on the river Danube in between Buda and Pest, so we are in a perfect position to explore this incredible and historic city.

