

PROGRAM GUIDE



NBiS-2016

The 19-th International Conference on
Network-Based Information Systems
and



*Intelligent Networking
and Collaborative Systems*

INCoS-2016

The 8-th International Conference on
Intelligent Networking and Collaborative Systems

September 7th - September 9th, 2016

VSB - Technical University of Ostrava, Czech Republic

Technically Co-sponsored by:



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Leonard Barolli, Fukuoka Institute of Technology, Japan
Makoto Takizawa, Hosei University, Japan

Message from the NBiS 2016 Steering Committee Co-Chairs

Welcome to the 19th International Conference on Network-Based Information Systems (NBiS 2016), which will be held at Technical University of Ostrava, Czech Republic from September 7 to September 9, 2016.

The main objective of NBiS is to bring together scientists, engineers, and researchers from both network systems and information systems with the aim of encouraging the exchange of ideas, opinions, and experiences between these two communities.

NBiS started as a workshop and was held for 12 years together with DEXA International Conference as one of the oldest among DEXA Workshops. The workshop was very successful and in 2009 edition the NBiS was held at IUPUI, Indianapolis, USA as an independent International Conference supported by many international volunteers. In following years, the NBiSs was held in Takayama, Gifu, Japan (2010), Tirana, Albania (2011), Melbourne, Australia (2012), Gwangju, Korea (2013), Salerno, Italy (2014) and Taipei, Taiwan (2015).

In this edition of NBiS, many papers were submitted from all over the world. They were carefully reviewed and only high quality papers will be presented during conference days. In conjunction with NBiS 2016 are held also 8 International Workshops where specific and hot topics are deeply discussed.

Many volunteer people have kindly helped us to prepare and organize NBiS 2016. First of all, we would like to thank General Co-Chairs, Program Co-Chairs and Workshops Co-Chairs for their great efforts to make NBiS-2016 a very successful event. We would like to thank all NBiS 2016 Organizing Committee Members, Program Committee Members and other volunteers for their great help and support. We have special thanks also to Finance Chair and Web Administrator Co-Chairs. Finally, we thank the Local Organization Team at Technical University of Ostrava, Czech Republic for their good arrangements.

We do hope that you will enjoy the conference and have a good time in Ostrava, Czech Republic.

NBiS 2016 Steering Committee Co-Chairs

Leonard Barolli, *Fukuoka Institute of Technology (FIT), Japan*

Makoto Takizawa, *Hosei University, Japan*

Welcome Message from NBiS 2016 General Co-Chairs

We would like to welcome you to the 19th International Conference on Network-Based Information Systems (NBiS 2016), which will be held at Technical University of Ostrava, Czech Republic from September 7 to September 9, 2016.

It is our honour to chair this prestigious conference, as one of the important conferences in the field. Extensive international participation, coupled with rigorous peer reviews, has made this an exceptional technical conference. The Technical Program and Workshops add important dimensions to this event. We hope that you will enjoy each and every component of this event and benefit from interactions with other attendees.

Since its inception, NBiS has attempted to bring together people interested in information and networking, in areas that range from the theoretical aspects to the practical design of new network systems, distributed systems, multimedia systems, Internet/web technologies, mobile computing, intelligent computing, pervasive/ubiquitous networks, dependable systems, semantic services, Grid, P2P, and scalable computing. For NBiS 2016, we have continued these efforts as novel networking concepts emerge and new applications flourish. NBiS 2016 consists of the main conference and 8 workshops. We received 152 papers, and out of them 40 were accepted (about 26% acceptance ratio), which will be presented during three days of the conference.

The organization of an international conference requires the support and help of many people. A lot of people have helped and worked hard for a successful NBiS 2016 technical program and conference proceedings. First, we would like to thank all the authors for submitting their papers. We are indebted to Track Co-Chairs, Program Committee members and reviewers who carried out the most difficult work of carefully evaluating the submitted papers.

We would like to give our special thanks to Prof. Leonard Barolli and Prof. Makoto Takizawa the chairs of the Steering Committee for giving us the opportunity to hold this conference and for their guidance on organizing the conference. We would like to thank Program Co-Chairs and Workshops Co-Chairs for their excellent work. We would like to express our great appreciation to our keynote speakers for accepting our invitation as keynote speakers of NBiS 2016.

We would like to thank the Local Arrangements Chairs and Local Organization Team at Technical University of Ostrava, Czech Republic for making good local arrangements for the conference.

We hope that you have an enjoyable and productive time during this conference, and have a great time in Ostrava, Czech Republic.

NBiS 2016 General Co-Chairs

Tomoya Enokido, *Rissho University, Japan*

Fatos Xhafa, *Technical University of Catalonia, Spain*

Vaclav Snasel, *Technical University of Ostrava, Czech Republic*

Welcome Message from NBiS 2016 Program Committee Co-Chairs

Welcome to the 19th International Conference on Network-Based Information Systems (NBiS 2016), which will be held at Technical University of Ostrava, Czech Republic from September 7 to September 9, 2016.

The purpose of NBiS conference is to bring together developers and researchers to share ideas and research work in the emerging areas of network and information systems.

The contributions included in the proceedings of NBiS 2016 cover all aspects of theory, design and application of computer networks and information systems. There are many topics of information networking such as cloud computing, wireless sensor networks, ad hoc networks, peer-to-peer systems, grid computing, social networking, multimedia systems and applications, security, distributed and parallel systems and mobile computing.

In this edition, 152 submissions were received from all over the world. Each submitted paper was peer-reviewed by Program Committee members and external reviewers who are experts in the subject area of the paper. Then, the Program Committee accepted 40 papers (about 26% acceptance ratio). In the conference program are also included the distinguished keynote addresses.

The organization of an International Conference requires the support and help of many people. First, we would like to thank all authors for submitting their papers. We would like to thank all Track Chairs and Program Committee Members, who carried out the most difficult work of carefully evaluating the submitted papers. We also would like to thank NBiS 2016 Workshops Chairs for organizing excellent workshops with NBiS 2016 conference.

We would like to give special thanks to Prof. Leonard Barolli and Prof. Makoto Takizawa the Chairs of the Steering Committee of NBiS for their strong encouragement, guidance, insights, and for their effective coordination of conference organization. We would like to greatly thank General Co-Chairs for their great support and invaluable suggestions to make the conference a very successful event.

We would like to express our great appreciation to Dr. Makoto Ikeda for his great efforts and efficient work to deal with many conference matters.

We hope you will enjoy the conference and have a great time in Ostrava, Czech Republic.

NBiS 2016 Program Committee Co-Chairs

Jan Platos, *Technical University of Ostrava, Czech Republic*

Bhed Bista, *Iwate Prefectural University, Japan*

Markus Aleksy, *ABB AG Corporate Research Centre, Germany*

Welcome Message from the Workshops Co-Chairs of NBiS 2016 International Conference

Welcome to the NBiS 2016 Workshops to be held in conjunction with the 19-th International Conference on Network-Based Information Systems (NBiS 2016), which will be held at Technical University of Ostrava, Czech Republic from September 7 to September 9, 2016.

The goal of NBiS 2016 workshops is to provide a forum for international researchers and practitioners to exchange and share their new ideas, research results, and ongoing work on leading-edge topics in the different fields of network-based information systems and their applications. Some of the accepted workshops deal with topics that open up perspectives beyond the ordinary, thus, enriching the topics usually addressed by the NBiS 2016 conference.

For this edition, the following workshops will be held with NBiS 2016.

1. The 11th International Workshop on Network-based Virtual Reality and Tele-existence (INVITE 2016)
2. The 10th International Workshop on Advanced Distributed and Parallel Network Applications (ADPNA 2016)
3. The 7th International Workshop on Intelligent Sensors and Smart Environments (ISSE 2016)
4. The 7th International Workshop on Trustworthy Computing and Security (TwCSec 2016)
5. The 7th International Workshop on Heterogeneous Networking Environments and Technologies (HETNET 2016)
6. The 6th International Workshop on Information Networking and Wireless Communications (INWC 2016)
7. The 5th International Workshop on Web Services and Social Media (WSSM 2016)
8. The 5th International Workshop on Advances in Data Engineering and Mobile Computing (DEMoC 2016)

We would like to thank the research community for their great response to NBiS 2016 workshops. The excellent technical program of the workshops was the result of a professional work from workshop chairs, workshop program committees, reviewers, and authors.

We would like to give our special thanks to Prof. Leonard Barolli and Prof. Makoto Takizawa the Steering Committee Chairs of NBiS conference for their strong encouragement and guidance to organize the NBiS 2016 workshops. We would like to thank NBiS 2016 General Co-Chairs and Program Co-Chairs for their advices to make possible organization of NBiS 2016 workshops.

We would like to express special thanks to NBiS 2016 Web Administrator Chairs for their timely unlimited support for managing the conference systems. We also would like to thank NBiS 2016 Local Arrangement Co-Chairs and Local Organization Team at Technical University of Ostrava, Czech Republic for making the local arrangement for the conference and workshops.

We wish all of you entertaining and rewarding experience in all workshops and NBiS 2016 conference.

Workshops Co-Chairs of NBiS 2016 International Conference

Miroslav Voznak, *Technical University of Ostrava, Czech Republic*

Hui-Huang Hsu, *Tamkang University, Taiwan*

Hiroaki Kikuchi, *Meiji University, Japan*

INCoS-2016 Conference Organizing Committee**Honorary Chairs**

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Martin Mikulec, Technical University of Ostrava, Czech Republic

Finance Chair

Makoto Ikeda, Fukuoka Institute of Technology, Japan

Steering Committee Co-Chairs

Fatos Xhafa, Technical University of Catalonia, Spain
Leonard Barolli, Fukuoka Institute of Technology, Japan

Welcome Message from 8th IEEE INCoS-2016 Conference Chairs

Welcome to the 8th IEEE International Conference on Intelligent Networking and Collaborative Systems (INCoS-2016), which is held from 7th September to 9th September 2016 at VSB Technical University of Ostrava, Ostrava, Czech Republic. As in all previous editions, the INCoS-2016 conference is technically sponsored by IEEE Systems, Man & Cybernetics (IEEE SMC Society).

INCoS is a multidisciplinary conference that covers latest advances in intelligent social networks and collaborative systems, intelligent networking systems, mobile collaborative systems, secure intelligent cloud systems, etc. Additionally, security, authentication, privacy, data trust and user trustworthiness behaviour has become crosscutting features of intelligent collaborative systems. With the fast development of the Internet, we are experiencing a shift from the traditional sharing of information and applications as the main purpose of the Web to an emergent paradigm, which locates people at the very centre of networks and exploits the value of people's connections, relations and collaboration. Social networks are also playing a major role in the dynamics and structure of intelligent Web-based networking and collaborative systems.

Virtual campuses, virtual communities and organizations strongly leverage intelligent networking and collaborative systems by a great variety of formal and informal electronic relations, such as business-to-business, peer-to-peer and many types of online collaborative learning interactions, including the emerging MOOCs systems. This has resulted in entangled systems that need to be managed efficiently and in an autonomous way. In addition, latest and powerful technologies based on Grid and wireless infrastructure as well as Cloud computing are currently enhancing collaborative and networking applications a great deal but also facing new issues and challenges. Well-known social networks lack of knowledge management and adaptive solutions and the information shared among peers is rather static. INCoS-2016 conference paid a special attention to security, privacy and trust in Social networking, Cloud Computing Services and Storage, Organization, Management and Autonomic Computing, Hidden Complex Networks Resource Management and Optimization, etc.

The principal aim of this conference is to stimulate research that will lead to the creation of responsive environments for networking and, at longer-term, the development of adaptive, secure, mobile, and intuitive intelligent systems for collaborative work and learning. INCoS-2016 addressed a large number of themes and focuses on the following research tracks:

- Data Mining, Machine Learning and Collective Intelligence
- Fuzzy Systems and Knowledge Management
- Grid And P2P Distributed Infrastructure for Intelligent Networking and Collaborative Systems
- Nature's Inspired Parallel Collaborative Systems
- Security, Organization, Management and Autonomic Computing for Intelligent Networking and Collaborative Systems
- Software Engineering, Semantics and Ontologies for Intelligent Networking and Collaborative Systems
- Wireless and Sensor Systems for Intelligent Networking and Collaborative Systems
- Service-based Systems for Enterprise Activities Planning and Management
- Next Generation Secure Network Protocols and Components
- Big Data Analytics for Learning, Networking and Collaborative Systems
- Cloud Computing: Services, Storage, Security and Privacy
- Intelligent Collaborative Systems for Work and Learning, Virtual Organization and Campuses

- Social Networking and Collaborative Systems
- Intelligent Sensor Networks for Environmental Monitoring
- Hidden Complex Networks in Dynamical Processes

As in all previous editions, INCoS-2016 counted on with the support and collaboration of a large and internationally recognized TPC covering all main themes of the conference. After a careful peer review process, in which each paper was reviewed by at least two referees (in average three reviews per submission), there were accepted 58 regular papers (32% acceptance rate). Additionally, a number of workshops were organized in conjunction with the conference, in which 42 workshop papers were accepted.

The successful organization of the conference is achieved thanks to the great collaboration and hard work of many people and conference supporters. First and foremost, we would like to thank all the authors for their continued support to the conference by submitting their research work to the conference, for their presentations and discussions during the conference days. We would like to thank TPC members and external reviewers for their work by carefully evaluating the submissions and providing constructive feedback to authors. We would like to thank the track chairs for their work on setting up the tracks and the respective TPCs and also for actively promoting the conference and their tracks. We would like to appreciate the work of PC Co-chairs Ivan Zelinka, Technical University of Ostrava, Czech Republic, Santi Caballé, Open University of Catalonia, Spain and Xu An Wang, Engineering University of CAPF P.R. China. The Workshops Co-Chairs Pavel Kromer, Technical University of Ostrava, Czech Republic, Francesco Orciuoli, University of Salerno, Italy and Tomoki Yoshihisa, Osaka University, Japan are appreciated for the successful organization of workshops in conjunction with main conference. We would like to acknowledge the excellent work and support by the International Advisory Committee Witold Pedrycz (chair), University of Alberta, Canada, Vincenzo Loia, University of Salerno, Italy, Masato Tsuru, Kyushu Institute of Technology, Japan, Albert Zomaya, University of Sydney, Australia, and Christine Strauss, University of Vienna, Austria.

Our gratitude and acknowledgment for the conference keynotes, Prof. Geoffrey Charles Fox, Indiana University, USA, Prof. Marek R. Ogiela, AGH University of Science, Krakow, Poland, and Prof. My T. Thai, University of Florida, Gainesville, FL, USA, for their interesting and inspiring keynote speeches.

We greatly appreciate the support by Web Administrators Shinji Sakamoto, Yi Liu and Donald Elmazi, Fukuoka Institute of Technology (FIT), Japan and Finance Chair Makoto Ikeda, Fukuoka Institute of Technology (FIT), Japan.

We would like to give special thanks to the members of the local organizing committee from VSB Technical University of Ostrava for excellent arrangements for the conference.

We are very grateful to IEEE SMC as well as several academic institutions for their technical sponsorship, endorsement and assistance.

Finally, we hope that you will find these proceedings to be a valuable resource in your professional, research and educational activities!

We wish you will enjoy your stay in Ostrava, Czech Republic and look forward to seeing you again in forthcoming edition of INCoS conference!

INCoS 2016 General Co-Chairs

Fatos Xhafa, *Technical University of Catalonia, Spain*
Leonard Barolli, *Fukuoka Institute of Technology (FIT), Japan*
Vaclav Snasel, *VSB Technical University of Ostrava, Czech Republic*

Welcome Message from the 8-th INCoS-2016 Workshops Co-Chairs

Welcome to Workshops of the 8th IEEE International Conference on Intelligent Networking and Collaborative Systems (INCoS-2016), which is held from 7th September to 9th September 2016 at Technical University of Ostrava, Czech Republic. INCoS-2016 conference is technically sponsored by IEEE Systems, Man & Cybernetics (IEEE SMC Society).

Several workshops are now a consolidated part of the conference and offer to authors the possibility to present and discuss latest research finding, ideas and work on progress. In this edition of the conference, there are held seven workshops, which complemented the INCoS main themes with specific themes and research issues and challenges, as follows.

The list of workshops follows below:

1. 8th International Workshop on Information Network Design (WIND 2016)
2. 6th International Workshop on Adaptive Learning via Interactive, Collaborative and Emotional Approaches (ALICE 2016)
3. 4th International Workshop on Frontiers in Intelligent Networking and Collaborative Systems (FINCoS-2016)
4. 2nd International Workshop on Evolution of Social Networks (ESN-2016)
5. 2nd International Workshop on Intelligent Applications for Business Productivity (IABP-2016)
6. 2nd Workshop on Security and Privacy in Systems and Communication Networks (SecureSysComm-2016)
7. International Workshop for Collaborative e-Business Systems (IWCBS-2016)

We would like to thank the workshop organizers for their great efforts and hard work in proposing the workshop, selecting the papers, the interesting programs and for the arrangements of the workshop during the conference days. We are grateful to the INCoS-2016 Conference Chairs for inviting us to be the workshops co-chairs of the conference.

We hope you will enjoy the workshops programs and discussions during the conference days and enjoy your stay in Ostrava, Czech Republic!

INCoS-2016 Workshops Co-Chairs

Pavel Kromer, *Technical University of Ostrava, Czech Republic*

Francesco Orciuoli, *University of Salerno, Italy*

Tomoki Yoshihisa, *Osaka University, Japan*

NBiS-2016 & INCoS-2016 Keynote I



Prof. Geoffrey Charles Fox, Indiana University, USA

Structure of Applications and Infrastructure in Convergence of High Performance Computing and Big Data

Abstract: Two major trends in computing systems are the growth in high performance computing (HPC) with an international exascale initiative, and the big data phenomenon with an accompanying cloud infrastructure of well publicized dramatic and increasing size and sophistication. In studying and linking these trends one needs to consider multiple aspects: hardware, software, applications/algorithms and even broader issues like business model and education.

In this talk we study in detail a convergence approach for software and applications / algorithms and show what hardware architectures it suggests.

We give examples of data analytics running on HPC systems including details on persuading Java to run fast.

Some details can be found at
<http://dsc.soic.indiana.edu/publications/HPCBigDataConvergence.pdf>

NBiS-2016 & INCoS-2016 Keynote II

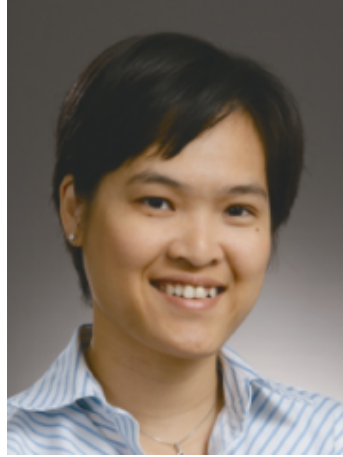


Prof. Marek R. Ogiela, AGH University of Science and Technology, Krakow, Poland

Cognitive Cryptography - A New Computational Paradigm

Abstract: New generation information systems are developing quickly due to the use of the latest achievements in cognitive informatics and biologically-inspired computational approaches. Intelligent data analysis have recently become very significant in such systems, especially in the context of searching various information, its collecting and also enabling its semantic evaluation with final meaning interpretation. What is also important in advanced computer systems are techniques used for securing strategic or sensitive data and allowing its intelligent transmission or management in distributed infrastructures or in the cloud. There is no doubt that all these methods will become even more important in the near future, as a result of the very dynamic development of the new generation cognitive information systems dedicated for pervasive computing in cyberspace or ambient world. In this talk will be presented new opportunities for developing unique solutions in security areas and cryptography, based on cognitive computational approaches and semantic reasoning methodologies. Such techniques can be used for interpretation of the meaning of encrypted and distributed information and involved into the encryption process.

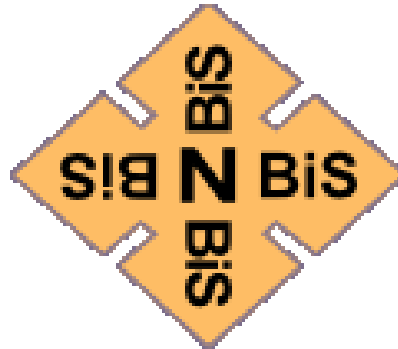
NBiS-2016 & INCoS-2016 Keynote III



Prof. My T. Thai, University of Florida, Gainesville, FL, USA

Viral Marketing – A Road to Billion-scale Networks

Abstract: One of the most fundamental problems in viral marketing is Influence Maximization (IM), which seeks to find a set of k initial seed users in a network so as to maximize the size of influenced users. Despite the huge amount of efforts, IM in billion-scale networks such as Facebook, Twitter, and Friendster has not been satisfactorily solved. In this talk, we will discuss a long road to achieve a quasi-linear time algorithm while guaranteeing the best approximation ratio $(1 - 1/e - \epsilon)$ to the IM problem. We will further present the latest exciting results, almost optimally solving the IM problem with a ratio of $(1 - \epsilon)$ on billion-scale networks.



NBiS-2016

Main Conference and Workshops Program

Wednesday, September 7, 2016

08:00 Registration

**09:00-10:30 Single Session: Opening Ceremony and NBiS-2016 & INCoS-2016
Keynote I**

NBiS-2016 & INCoS-2016 Keynote Talk I (PLENARY ROOM)

Prof. Geoffrey Charles Fox: Structure of Applications and Infrastructure in Convergence of High Performance Computing and Big Data

10:30-11:00 Coffee Break**11:00-12:00 Single Session: NBiS-2016 & INCoS-2016 Keynote II****NBiS-2016 & INCoS-2016 Keynote Talk II (PLENARY ROOM)**

Prof. Marek R. Ogiela: Cognitive Cryptography - A New Computational Paradigm

12:00-13:30 Lunch Break**13:30-15:30 Parallel Sessions****NBiS-S1: Intelligent Networking****Chair: Makoto Ikeda, Fukuoka Institute of Technology, Japan**

1. Node Placement in Wireless Mesh Networks: A Comparison Study of WMN-SA and WMN-PSO Simulation Systems
Shinji Sakamoto, Tetsuya Oda, Makoto Ikeda, Leonard Barolli, Fatos Xhafa, Isaac Woungang
2. Experimental Results of a Raspberry Pi Based WMN Testbed in Indoor Environment: A Comparison Study of LoS and NLoS Scenarios
Tetsuya Oda, Donald Elmazi, Masafumi Yamada, Ryoichiro Obukata, Leonard Barolli, Makoto Takizawa
3. Performance Analysis of WMNs by WMN-GA Simulation System for Exponential Distribution Considering EDCA and DCF
Iilir Shinko, Tetsuya Oda, Admir Barolli, Vladi Kolicic, Leonard Barolli, Fatos Xhafa
4. Performance Analysis of WMNs by WMN-GA Simulation System for Different WMN Architectures and TCP Congestion-Avoidance Algorithms Considering Uniform Distribution
Admir Barolli, Tetsuya Oda, Iilir Shinko, Leonard Barolli, Fatos Xhafa, Makoto Takizawa
5. Selection of Actor Nodes in Wireless Sensor and Actor Networks Considering as a New Parameter Actor Congestion Situation
Donald Elmazi, Evjola Spaho, Elis Kulla, Tetsuya Oda, Makoto Ikeda, Leonard Barolli
6. A GA-Based Simulation System for WMNs: Performance Analysis for Different WMN Architectures Considering Transmission Rate and OLSR Protocol
Keita Matsuo, Tetsuya Oda, Admir Barolli, Makoto Ikeda, Leonard Barolli, Fatos Xhafa

NBiS-S2: Network Protocols and Models**Chair: Makoto Takizawa, Hosei University, Japan**

1. Subscription Initialization (SI) Protocol to Prevent Illegal Information Flow in Peer-to-Peer Publish/Subscribe Systems
Shigenari Nakamura, Tomoya Enokido, Makoto Takizawa
2. A Model for Energy-Aware Migration of Virtual Machines
Dilawaer Duolikun, Ryo Watanabe, Tomoya Enokido, Makoto Takizawa
3. Evaluations of Wireless V2X Communication Systems of for Winter Road Surveillance Systems
Noriki Uchida, Kenta Ito, Go Hirakawa, Yoshitaka Shibata

4. Evaluation of Different DTN Routing Protocols in an Opportunistic Network Considering Many-to-One Communication Scenario
Evjola Spaho, Kevin Bylykbashi, Leonard Barolli, Vladi Kolicic, Argenti Lala
5. Privacy-Aware Routing for Sharing Sensitive Information across Wide-Area Networks
Antonio Colella, Aniello Castiglione, Alfredo De Santis, Christian Esposito, Francesco Palmieri
6. A Study of Packet Sampling Methods for Protecting Sensors Deployed on Darknet
Masaki Narita, Keisuke Kamada, Kanayo Ogura, Bhed Bahadur Bista, Toyoo Takata

INWC-S1: Mobile Computing and Communication

Chair: Hiroshi Maeda, Fukuoka Institute of Technology, Japan

1. Performance Evaluation of a Fuzzy-Based Connection Admission Control System for Wireless Cellular Networks Considering Security and Priority Parameters
Takaaki Inaba, Donald Elmazi, Shinji Sakamoto, Tetsuya Oda, Makoto Ikeda, Leonard Barolli
2. An Improved Message Suppression Controller Considering Delayed Acknowledgment for VANETs
Daichi Koga, Makoto Ikeda, Leonard Barolli
3. Control of Envelope Pulse through Nonlinear and Dispersive Medium
Hiroshi Maeda, Jianming Jin, Kazuya Tomiura
4. Distributed Topology Control Protocols for Underwater Sensor Networks
Hina Nasir, Nadeem Javaid, Shaharyar Mahmood, Umar Qasim, Zahoor Ali Khan, Furqan Ahmed
5. Performance Evaluation of an Accessory Category Recognition System Using Deep Neural Network
Yuki Sakai, Tetsuya Oda, Makoto Ikeda, Leonard Barolli
6. Numerical and Experimental Study on Transmission Spectrum of Waveguide with Periodic Structure
Hiroshi Maeda, Kazuya Tomiura, Jianming Jin

TwCSec-S1: Secure Systems and Applications

Chair: Hiroaki Kikuchi, Meiji University, Japan

1. An Intrusion Tolerance Scheme for a Cloud of Databases Environment
Syrine Chatti, Habib Ounelli
2. A Neural Network Based User Identification for Tor Networks: Comparison Analysis of Different Activation Functions Using Friedman Test
Tetsuya Oda, Ryoichiro Obukata, Masafumi Yamada, Masahiro Hiyama, Leonard Barolli, Makoto Takizawa
3. Panoramic Image Mosaics Using Local Wavelet-Features
Feng Guo, Ying Wang
4. Three Dimensional Reconstruction from Single Uniform Texture Image with Unknown Lighting Conditions
Yujuan Sun, Qiuming Ma
5. Longest Common Sub-Sequence Computation and Retrieve for Encrypted Character Strings
Minghao Zhao, Zhen Li, Yilei Wang, Qiuliang Xu
6. A Survey of Prevention/Mitigation against Memory Corruption Attacks
Takamichi Saito, Ryohei Watanabe, Shuta Kondo, Shota Sugawara, Masahiro Yokoyama

15:30-16:00 Coffee Break

16:00-18:00 Parallel Sessions

NBiS-S3: Mobile and Wireless Networks**Chair: Alireza Shahrabi, Glasgow Caledonian University, United Kingdom**

1. A Balanced Energy Adaptive Routing Protocol with Sector Based Node Selection in Underwater WSNs
Saman Cheema, Nadeem Javaid, Shahzad Amin Sheikh, Zahoor Ali Khan, Umar Qasim
2. MC: Maximum Coverage Routing Protocol for Underwater Wireless Sensor Networks
Arshad Sher, Nadeem Javaid, Ghufraan Ahmed, Saif Ul Islam, Umar Qasim, Zahoor Ali Khan
3. Performance Comparison of Sender-Based and Receiver-Based Scheduling MAC Protocols for Underwater Sensor Networks
Faisal Alfouzan, Alireza Shahrabi, Seyed Mohammad Ghoreyshi, Tuleen Boutaleb
4. An Improvement in Zone Routing Protocol Using Bloom Filter
Yuria Oigawa, Fumiaki Sato
5. Power Control Scheme for Underlay Approach in Cognitive Radio Networks
Monika Pathak, Sanjay K. Dhurandher, Isaac Woungang, Bhagyashri Tushir, Vinesh Kumar, Makoto Takizawa, Leonard Barolli
6. A Zero Watermarking Scheme for Data Integrity in Wireless Sensor Networks
Khizar Hameed, M. Saleem Khan, Idrees Ahmed, Zuhaib U. Ahmad, Abid Khan, Aun Haider, Nadeem Javaid

NBiS-S4: Network Security and Privacy**Chair: Mirang Park, Kanagawa Institute of Technology, Japan**

1. Challenge of Deep Learning against CAPTCHA with Amodal Completion and Aftereffects by Colors
Tomoka Azakami, Chihiro Shibata, Ryuya Uda
2. Proposal and Evaluation of Cyber Defense System Using Blacklist Refined Based on Authentication Results
Hirofumi Nakakoji, Yasuhiro Fujii, Yoshiaki Isobe, Tomohiro Shigemoto, Tetsuro Kito, Naoki Hayashi, Nobutaka Kawaguchi, Naoki Shimotsuma, Hiroaki Kikuchi
3. A Browser Scanner: Collecting Intranet Information
Rio Hosoi, Takamichi Saito, Takayuki Ishikawa, Daichi Miyata, Yongyan Chen
4. SGM: A Subgroup Management Scheme Using K-Means Clustering in M2M Systems
Jihoon Hong, Mirang Park, Naonobu Okazaki
5. A Defense Method against Distributed Slow HTTP DoS Attack
Tetsuya Hirakawa, Kanayo Ogura, Bhed Bahadur Bista, Toyoo Takata
6. A Micro Biometric Authentication Mechanism Considering Minute Patterns of the Human Body: A Proposal and the First Attempt
Masahiro Fujita, Yuto Mano, Takuya Kaneko, Kenta Takahashi, Masakatsu Nishigaki

HETNET-S1: Heterogeneous Networking and Applications**Chair: Fatos Xhafa, Technical University of Catalonia, Spain**

1. Topic-Based Causally Ordered Delivery of Event Messages in a Peer-to-Peer (P2P) Model of Publish/Subscribe Systems
Hiroki Nakayama, Shigenari Nakamura, Tomoya Enokido, Makoto Takizawa
2. Improving Node Security in MANET Clusters: A Comparison Study of Two Fuzzy-Based Systems
Mirjeta Alinci, Takaaki Inaba, Donald Elmazi, Evjola Spaho, Vladi Kolic, Leonard Barolli
3. Joint Attack: A New Privacy Attack for Incremental Data Publishing
Torsak Soontornphand, Juggapong Natwichai
4. Two-Stage Centroid Localization for Wireless Sensor Networks Using Received Signal Strength
Zengfeng Wang, Yujuan Sun, Hao Zhang, Tingting Lu

5. Proposition of Division-Based Broadcasting System over Wireless LAN
Yusuke Gotoh, Yuki Takagi
6. Improved Genetic Algorithm Based Energy Efficient Routing in Two-Tiered Wireless Sensor Networks
Muhammad Zain-Ul-Abidin, Muhammad, Hammad Maqsood, Umar Qasim, Zahoor Ali Khan, Nadeem Javaid

ISSE-S1: Intelligent and Smart Environments**Chair: Takahiro Uchiya, Nagoya Institute of Technology, Japan**

1. Performance Evaluation of an Ambient Intelligence Testbed for Improving Quality of Life: Evaluation Using Mean Shift Clustering Algorithm
Ryoichiro Obukata, Tetsuya Oda, Donald Elmazi, Makoto Ikeda, Keita Matsuo, Leonard Barolli
2. Performance Evaluation of an IoT-Based e-Learning Testbed Considering OLSR Protocol in a NLoS Environment
Masafumi Yamada, Tetsuya Oda, Yi Liu, Keita Matsuo, Makoto Ikeda, Leonard Barolli
3. Realistic Home Energy Management System Using Exogenous Grid Signals
Adnan Ahmad, Nadeem Javaid, Saeed Ahmad, Shah Saud, Umar Qasim, Zahoor Ali Khan
4. Related Word Recommendation Mechanism for Speech Dialogue System
Yuto Ishida, Takahiro Uchiya, Kouhei Yamamoto, Daisuke Yamamoto, Ryota Nishimura, Ichi Takumi
5. Localization in Wireless Sensor Networks Based on RSS Rank Vectors
Zengfeng Wang, Hao Zhang, Tingting Lu

19:00-21:00 Welcome Reception Party

The Welcome reception will be held in the Faculty Lobby.
In case of good weather, we will have it in the front of the building.
It will be the same building as the conference venue.

Thursday, September 8, 2016**08:00 Registration****09:00-10:00 Single Session: NBiS-2016 & INCoS-2016 Keynote III****NBiS-2016 & INCoS-2016 Keynote Talk III**

Prof. My T. Thai: Viral Marketing - A Road to Billion-scale Networks

10:00-10:30 Coffee Break**10:30-12:30 Parallel Sessions****NBiS-S5: Database, Data Mining and Big Data****Chair: Salvatore Venticinque, Second University of Naples, Italy**

1. A Cyber Physical System of Smart Micro-Grids
Alba Amato, Rocco Aversa, Beniamino Di Martino, Salvatore Venticinque
2. A Prediction-Based Smart Meter Data Generator
Nadeem Iftikhar, Xiufeng Liu, Finn Ebertsen Nordbjerg, Sergiu Danalachi
3. Adaptive Focused Website Segment Crawler
Tanaphol Suebchua, Arnon Rungsawang, Hayato Yamana
4. JsFlow: Integration of Massive Streams and Batches via JSON-Based Dataflow Algebra
Hirotochi Cho, Hiroaki Shiokawa, Hiroyuki Kitagawa
5. Transient Stability Analysis of an Islanded Microgrid under Variable Load
Muhammad Babar Rasheed, Muhammad Awais, Nadeem Javaid, Waseem Nazar, Umar Qasim, Zahoor Ali Khan

NBiS-S6: Energy Efficient Networks**Chair: Tomoya Enokido, Rissho University, Japan**

1. A Performance Analysis in the One-Way Full Duplex Relaying Network
Tam Nguyen Kieu, Khanh Nhan Nguyen Huu, Nguyen Ngoc Long, Hung Ha Duy, Thuan Do Dinh, Miroslav Voznak
2. Multi-Level Power Consumption and Computation Models and Energy-Efficient Server Selection Algorithms in a Scalable Cluster
Hiroki Kataoka, Atsuhiko Sawada, Dilawaer Duolikun, Tomoya Enokido, Makoto Takizawa
3. Selection Algorithms to Select Energy-Efficient Servers for Storage and Computation Processes
Atsuhiko Sawada, Hiroki Kataoka, Dilawaer Duolikun, Tomoya Enokido, Makoto Takizawa
4. Energy Aware Dynamic Routing Using SDN for a Campus Network
Malik Najmus Siraj, Nadeem Javaid, Qaisar Shafi, Zaheer Ahmed, Umar Qasim, Zahoor Ali Khan
5. The Improved Redundant Delay Time-Based (IRDTB) Algorithm to Perform Computation Type Application Processes in Heterogeneous Server Clusters
Tomoya Enokido, Makoto Takizawa
6. EEORS: Energy Efficient Optimal Relay Selection Protocol for Underwater WSNs
Anwar Khan, Mudassir Ejaz, Nadeem Javaid, Muhammad Qaisar Azeemi, Umar Qasim, Zahoor Ali Khan

WSSM-S1: Web Services**Chair: Shusuke Okamoto, Seikei University, Japan**

1. A Handy Real-Time Location System for Community Bus Service
Ryousuke Iiya, Erjing Zhou, Michitoshi Niibori, Masaru Kamada, Osamu Saitou, Susumu Shibusawa
2. Attendance Management System Using a Mobile Device and a Web Application
Jun Ii
3. A Reservation System for Oral Exam of Programming Class
Masaki Kohana, Shusuke Okamoto
4. A Real-Time Web-Cast System for Classes in the BYOD Style
Daiki Ito, Michitoshi Niibori, Masaru Kamada
5. A Proposal of Distributed Autonomous Cooperative System about Exclusive Web Crawling for Cyber Security
Yoshihiro Kawano, Eiji Nunohiro

INVITE-S1: Multimedia Applications and Virtual Reality**Chair: Yoshitaka Shibata, Iwate Prefectural University, Japan**

1. Multilingual Digital Signage Using iBeacon Communication
Tetsuro Ogi, Kenichiro Ito, Shigeyuki Konita
2. A Collection and Delivery Method of Contents in Tourism with Location Information
Go Hirakawa, Ryoichi Nagatsuji, Yoshitaka Shibata
3. 3D Modeling of Reconstruction Plan at Sanriku Coast for Great East Japan Earthquake: Visualization of the Reconstruction Plan for Effective Information Sharing
A. Doi, K. Oshida, Y. Takashima, K. Sakakibara, T. Itoh
4. Fusion Visualization System as an Open Science Foundation
Hideo Miyachi, Koji Koyamada, Daisuke Matsuoka, Isamu Kuroki
5. Fundamental Consideration on Possibility of Meta Realistic Sensation Communication Technology
Yasuo Ebar
6. Tourist Information System Based on Beacon and Augmented Reality Technologies
Yoshitaka Shibata, Katsumi Sasaki

12:30-14:00 Lunch Break

14:00-16:00 Parallel Sessions

NBIS-S7: Multimedia Applications**Chair: Hiroaki Nishino, Oita University, Japan**

1. Performance of H.264, H.265, VP8 and VP9 Compression Standards for High Resolutions
Juraj Bienik, Miroslav Uhrina, Michal Kuba, Martin Vaculik
2. Recommendation System That Presents the Recommendation Sentence in Alignment with the Contents
Yuto Ishida, Takahiro Uchiya, Ichi Takumi
3. Instant Video Share and View System for Ski-Jump Training Using Cheap Devices
Nobuyoshi Sato, Noriyuki Umeki, Yoshitoshi Murata, Akimasa Suzuki
4. An Engineering Education Support System Using Projection-Based AR
Toshiyuki Haramaki, Hiroaki Nishino

5. A Fuzzy-Based Reliability for JXTA-Overlay P2P Platform Considering Data Download Speed, Peer Congestion Situation, Number of Interaction and Packet Loss Parameters
Yi Liu, Oda Tetsuya, Evjola Spaho, Keita Matsuo, Leonard Barolli, Fatos Xhafa

ADPNA-S1: Distributed and Parallel Systems

Chair: Tomoya Enokido, Rissho University, Japan

1. Risk Assessment Based on User's Viewpoint for Mobile Ad Hoc Network
Shigeaki Tanimoto, Shunsuke Shiraki, Motoi Iwashita, Tohru Kobayashi, Hiroyuki Sato, Atsushi Kanai
2. Social Media Mediation System for Elderly People: Message Exchange Learning Type Switching Method
Toru Kobayashi, Kazushige Katsuragi, Taishi Miyazaki, Kenichi Arai, Tomoya Sakai, Makoto Fujimura
3. An Eco Model of Process Migration with Virtual Machines
Ryo Watanabe, Dilawaer Duolikun, Tomoya Enokido, Makoto Takizawa
4. Peer-to-Peer Network System and Application Design on Multiple Virtual Networks
Nanami Imada, Kazunori Ueda
5. The Optimization of PID Control Strategy in VAV System Based on Bacterial Foraging Algorithm
Li Che
6. Proposal of a Zoo Walk Navigation System for Regional Revitalization
Yuki Shinotsuka, Tomoyuki Ishida, Kazuhiro Takahagi, Misaki Iyobe, Akatsu Norio, Kaoru Sugita, Noriki Uchida, Yoshitaka Shibata

WSSN-S2: Analysis and Developments

Chair: Masayuki Ihara, NTT Service Evolution Laboratories, Japan

1. A Preliminary Experiment of Tweet Filtering by Back Propagation
Shumpei Fujii, Michitoshi Niibori, Masaru Kamada
2. An Intensive Analysis on the Usage Situation of the Mobile Services in Japanese High Schools: Why and How are They Used?
Tadashi Okada, Jun Iio, Yoshihiko Kubota, Tatsuhiro Yonekura
3. A C++ Header Library for Web Applications
Shusuke Okamoto, Masaki Kohana
4. A Structure Editor for the English Language
Marina Nakano, Emi Masuda, Masaru Kamada
5. Estimation of Tags via Comments on Nico Nico Douga
Hiroki Sakaji, Masaki Kohana, Akio Kobayashi, Hiroyuki Sakai

DEMoC-S1: Data Engineering and Mobile Computing

Chair: Yusuke Gotoh, Okayama University, Japan

1. A Distributed Video Processing System for Internet Live Broadcasting Services
Satoru Matsumoto, Tomoki Yoshihisa, Tomoya Kawakami, Yoshimasa Ishi, Yuuichi Teranishi
2. A Navigation System for Controlling Sightseeing Route by Changing Presenting Information
Ruiwei Shen, Tsutomu Terada, Masahiko Tsukamoto
3. Estimating Trajectory of Inhabitants with Sparsely Aligned Infrared Sensors
Kazuya Murao, Tsutomu Terada, Ai Yano, Ryuichi Matsukura
4. Hybrid Broadcasting System for Webcast
Takeshi Ozaki, Yusuke Gotoh
5. Clustering for Similar Recipes in User-Generated Recipe Sites Based on Main Ingredients and Main Seasoning
Akiyo Nadamoto, Shunsuke Hanai, Hidetsugu Nanba

6. GPU Acceleration of Content-Based Image Retrieval Based on SIFT Descriptors
Yuta Kusamura, Yusuke Kozawa, Toshiyuki Amagasa, Hiroyuki Kitagawa

16:00-16:30 Coffee Break

19:00-21:00 Banquet Party

Dolni Vitkovice

Web-site: <http://www.dolnivitkovice.cz/>

Friday, September 9, 2016

NBiS-2016 Organizing Committee Meeting and Discussion



INCoS-2016

Main Conference and Workshops Program

Wednesday, September 7, 2016

08:00 Registration

**09:00-10:30 Single Session: Opening Ceremony and NBiS-2016 & INCoS-2016
Keynote I**

NBiS-2016 & INCoS-2016 Keynote Talk I (PLENARY ROOM)

Prof. Geoffrey Charles Fox: Structure of Applications and Infrastructure in Convergence of High Performance Computing and Big Data

10:30-11:00 Coffee Break

11:00-12:00 Single Session: NBiS-2016 & INCoS-2016 Keynote II

NBiS-2016 & INCoS-2016 Keynote Talk II (PLENARY ROOM)

Prof. Marek R. Ogiela: Cognitive Cryptography - A New Computational Paradigm

12:00-13:30 Lunch Break

13:30-15:30 Parallel Sessions

INCoS-S1: Intelligent Networking and Collaborative Systems

Chair: Natalia Kryvinksa, University of Vienna, Austria

1. Estimating Proper Communication Distance for Epidemic Routing in Japanese Urban Areas Using SNS-Based People Flow Data
Akihiro Fujihara
2. The Research of Possibility of Sharing Use of Wireless and Mobile Technologies for Organizing the Radio Channels of Operation Control System of Earthmoving and Construction Machines
Tatyana Golubeva, Sergey Konshin
3. The Benefits and Risks of Enterprise Social Networks
Martina Drahošová, Peter Balco
4. BEEC: Balanced Energy Efficient Circular Routing Protocol for Underwater Wireless Sensor Networks
Ahmad Raza Hameed, Nadeem Javaid, Saif Ul Islam, Ghufraan Ahmed, Umar Qasim, Zahoor Ali Khan
5. Multi-class Intelligent Fault Diagnosis Approach Based on Modified Relevance Vector Machine
Jianshe Kang, Kun Wu, Kuo Chi, Yinxia Du
6. Node Importance of Complex Networks Based on Cascading Failure Dynamic
Zhen-Hua Li, Dong-Li Duan

INCoS-S2: Cloud Computing for Secure Data and Management Systems

Chair: Fatos Xhafa, Technical University of Catalonia, Spain

1. Design Patterns in Management Systems
Viliam Malcher
2. Data Understanding Techniques for Management Application and Cryptography
Marek R. Ogiela, Lidia Ogiela
3. Identity Based Proxy Re-Encryption Scheme (IBPRE+) for Secure Cloud Data Sharing
Xu An Wang, Fatos Xhafa, Zhiheng Zheng, Jinting Nie
4. A Cloud Platform for CAE Simulation in Supercomputing Environment
Ziyun Deng, Jing Zhang
5. Review of Virtual Memory Optimization in Cloud Environment
Ye Ding, He Xu, Peng Li, Jie Ding
6. Locality-Aware and Energy-Aware Job Pre-Assignment for Mapreduce
Lei Chen, Jing Zhang, Lijun Cai, Ziyun Deng, Tingqing He, XuAn Wang

ALICE-S1: Formative Assessment and Learners' Profiling**Chair: Santi Caballé, Open University of Catalonia, Spain**

1. Towards a Personalized Summative Model Based on Learner's Preferences
David Bañeres
2. A Preliminary Study about the Analytic Maturity of Educational Organizations
Isabel Guitart, Jordi Conesa, Jordi Casas
3. eOrient@ A Recommender System to Address Life-Long Learning and Promote Employability
David Bañeres, Jordi Conesa
4. On the Road to Speed-Reading and Fast Learning with CONCEPTUM
Daniele Toti, Marco Rinelli
5. A Prototype of an eLearning Platform in Support for Learning Analytics and Gamification
David Gañán, Santi Caballé, Robert Clarisó, Jordi Conesa
6. Learning through the Design of Interactive Stories: Exploring the Concept of Storyworld
Giuliana Dettori

FINCoS-S1: Frontiers in Intelligent Networking Systems and Application**Chair: Leonard Barolli, Fukuoka Institute of Technology, Japan**

1. Design and Implementation of Library Books Search and Management System Using RFID Technology
Haiming Cheng, Ling Huang, He Xu, Yifan Hu, Xu An Wang
2. A Novel Secure Architecture for the Internet of Things
Jiewei Qian, He Xu, Peng Li
3. A Novel Multi-class Classification Approach Based on Fruit Fly Optimization Algorithm and Relevance Vector Machine
Jianshe Kang, Kun Wu, Kuo Chi, Xuan Wang
4. A Calibration Approach for Accuracy Infrared Temperature
Yan-Hua Liang, Ze-Dong Qian
5. Bayesian Parameter Estimation of Weibull Mixtures Using Cuckoo Search
Kuo Chi, Jianshe Kang, Kun Wu, Xuan Wang
6. Numerical Investigation of Initial Condition and Singular Perturbation Parameter Value Influence on the Dynamical System Oscillatory Behaviour
Zuzana Sutova, Robert Vrabel

15:30-16:00 Coffee Break

16:00-18:00 Parallel Sessions

INCoS-S3: Nature's Inspired Computing and Optimization**Chair: Pavel Kromer, Technical University of Ostrava, Czech Republic**

1. Point-Based Scan Matching by Differential Evolution
Pavel Krömer, Jaromír Konečný, Michal Prauzek
2. Optimal Allocation of Public Parking Slots Using Evolutionary Algorithms
Javier Arellano-Verdejo, Enrique Alba
3. Smart Traffic Lights: A First Parallel Computing Approach
D. Souravlias, G. Luque, E. Alba, K. E. Parsopoulos

4. Mission-Oriented Maintenance Optimization Subject to Resources Constraints
Wenbin Cao, Qiwei Hu, Wenyuan Song, Yutao Wu
5. Comparative Assessment of Performance for Home Energy Management Controller in Smart Grid
Muhammad Hassan Rahim, Nadeem Javaid, Muhammad Bilal Janjua, Muhammad Naeem, Zahoor Ali Khan, Umar Qasim
6. The Features of Low-Connectivity Essential Proteins
Yun-Yuan Dong

INCoS-S4: Semantics, Social Networking and Collaborative Systems**Chair: Fatos Xhafa, Technical University of Catalonia, Spain**

1. Providing Smart Objects with Intelligent Tutoring Capabilities by Semantic Technologies
Giuseppe Fenza, Vincenzo Loia, Francesco Orciuoli
2. Apache Mahout's k-Means vs Fuzzy k-Means Performance Evaluation
Fatos Xhafa, Adriana Bogza, Santi Caballé, Leonard Barolli
3. Ontology-Based Approach for Semantic Description and the Discovery of e-Learning Web Services
Kahina Rabahallah, Faiçal Azouaou, Mohamed Tayeb Laskri
4. An Optimization Research on the Alternate Interval for Electronic Products
Yutao Wu, Xisheng Jia, Liang Wen, Xu'an Wang
5. The Research of Enhancing the Dependability of Cloud Services Using Self-Healing Mechanism
Feng Ye, Shengyan Wu, Qian Huang, Xu An Wang
6. An Improved Community Detection Algorithm Based on the Distance Dynamics
Tao Meng, Lijun Cai, Tinqin He, Lei Chen, Ziyun Deng

WIND-S1: Network Design, Management and Performance**Chair: Mario Köppen, Kyushu Institute of Technology, Japan**

1. Network Design Method by Finding Server Placement and Protected Links to Keep Connectivity to Servers Against Link Failures
Daishi Irie, Hiroyoshi Miwa
2. Network Design Method Based on Link Protection Taking Account of the Connectivity and Distance Between Sites
Tsuyoshi Yamasaki, Makoto Anan, Hiroyoshi Miwa
3. Proposal of the Network Resonance Method for Estimating Eigenvalues of the Scaled Laplacian Matrix
Satoshi Furutani, Chisa Takano, Masaki Aida
4. Making TCP/NC Adjustable to Time Varying Loss Rates
Nguyen Viet Ha, Kazumi Kumazoe, Masato Tsuru
5. The Price of Unfairness
Mario Köppen, Kaori Yoshida

IABP-S1: Intelligent Applications for Business Productivity**Chair: Omar Hussain, UNSW Canberra, Australia**

1. The Research of the University Public Opinion Management on Internet
Hongxia Li, Kai Yan
2. Research on Selecting Emergency Material Production Enterprises Based on Productivity Reserve
Liyang Chen, Feng Wang, Yutao Wu
3. A Bi-objective Model for Relief Supply Location in Post-Disaster Management
S. M. Khalili, M. Babagolzadeh, M. Yazdani, M. Saberi, E. Chang

4. A Goal Programming Approach for Group Decision Making with Four Incomplete Preference Relations
Ben Cheng, Shan Hu, Jiang-Wei Wang, Yun-Yuan Dong
5. Challenges in Efficient Customer Recognition in Contact Centre: State-of-the-Art Survey by focusing on Big Data techniques applicability
Morteza Saberi, Anne Karduck, Elizabeth Chang, Omar Hussain

19:00-21:00 Welcome Reception Party

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Thursday, September 8, 2016**08:00 Registration****09:00-10:00 Single Session: NBiS-2016 & INCoS-2016 Keynote III****NBiS-2016 & INCoS-2016 Keynote Talk III**

Prof. My T. Thai: Viral Marketing - A Road to Billion-scale Networks

10:00-10:30 Coffee Break**10:30-12:30 Parallel Sessions****INCoS-S5: Wireless, Mobile and Cognitive Networking Systems****Chair: Vaclav Snasel, Technical University of Ostrava, Czech Republic**

1. Traffic Control Method for Interactive Projection Mapping Control System
Yoshifumi Kamada, Tsuyoshi Yamasaki, Yuki Tsuno, Nobuyuki Tsuchimura, Hiroyoshi Miwa
2. Determinism through Path Diversity: Why Packet Replication Makes Sense
Jesica de Armas, Pere Tuset, Tengfei Chang, Ferran Adelantado, Thomas Watteyne, Xavier Vilajosana
3. Creating Dynamically Changing World Map for Computer Games with Advanced Image Processing A Use Case
Tomasz Hachaj
4. A Stackelberg Game for DSTC-Based Cognitive Radio Networks with Multiple Cooperative Relays
Lijie Wang, Yi Tang, Bo Yuan, Dangfeng Zhu
5. An Identity-Based Proxy Signature Scheme from Lattices in the Standard Model, Wang Li
Identity-based proxy signature, lattice, SIS, standard model, strong unforgeability
6. RSM and VSM: Two New Routing Protocols for Underwater WSNs
Babar Ali, Nadeem Javaid, Saif Ul Islam, Ghufuran Ahmed, Umar Qasim, Zahoor Ali Khan

INCoS-S6: Hidden Complex Networks**Chair: Ivan Zelinka, Technical University of Ostrava, Czech Republic**

1. Creating Complex Networks Using Multi-swarm PSO
Michal Pluhacek, Roman Senkerik, Adam Viktorin, Ivan Zelinka
2. On the Transforming of the Indices Selection Mechanism inside Differential Evolution into Complex Network
Roman Senkerik, Adam Viktorin, Michal Pluhacek
3. On Evolutionary Dynamics Modeled by Ant Algorithm
Ivan Zelinka, Lukas Tomaszek, Lumir Kojecky
4. An Efficient Proxy Re-Encryption Based on (Semi) Group Factorization Problems
Licheng Wang, Jing Li, Jianhua Yan, Zhiguo Qu
5. New Related-Key Impossible Differential Attack on MIBS-80
Lu Cheng, Peng Xu, Yuechuan Wei
6. Limitations on Low Variance k-Fold Cross Validation in Learning Set of Rules Inducers
Michal Vasinek, Jan Platoš, Vaclav Snasel

SecureSysComm-S1: Security and Privacy in Systems and Communication Networks**Chair: Massimo Ficco, Second University of Naples, Italy**

1. Cloud Security: From Per-Provider to Per-Service Security SLAs
Alessandra De Benedictis, Valentina Casola, Massimiliano Rak, Umberto Villano
2. Certificateless Multi-signcryption Scheme in Standard Model
Xuguang Wu, Mingqing Zhang, Shuaishuai Zhu
3. A Multi-sensor Data Fusion Approach for Detecting Direct Debit Frauds
Ferdinando Campanile, Gianfranco Cerullo, Salvatore D'Antonio, Giovanni Mazzeo, Gaetano Papale, Luigi Sgaglione
4. Data Leakage Detection Using System Call Provenance
Abir Awad, Sara Kadry, Guraraj Maddodi, Saul Gill, Brian Lee
5. Fully Detection of Illegal Value Use Defects
Yukun Dong, Yalan Wang
6. Intrusion Detection Techniques Based on Cutting-Based Real-Valued Negative Selection
Yang Lei, Xu'an Wang, Hongyan Yin

IWCBS-S1: Collaborative e-Business Systems**Chair: Fatos Xhafa, Technical University of Catalonia, Spain**

1. Using Topic Model for Intelligent Computer-Aided Diagnosis in Traditional Chinese Medicine
Jialin Ma, Yongjun Zhang
2. Research on the Job Stress Structure of Coal Miners Based on Textual Analysis
Hongxia Li, Hongxi Di
3. Data Security and Privacy Information Challenges in Cloud Computing
Weiwei Kong, Yang Lei, Jing Ma
4. The Prediction of PM2.5 Value Based on ARMA and Improved BP Neural Network Model
Hongxia Zhu, Xiuhua Lu
5. Intrusion Detection Techniques Based on Improved Intuitionistic Fuzzy Neural Networks
Yang Lei, Jia Liu, Hongyan Yin

12:30-14:00 Lunch Break**14:00-16:00 Parallel Sessions****INCoS-S7: Intelligent Systems for Collaborative Robotics and Sensing****Chair: Jan Vascak, Technical University of Kosice, Slovakia**

1. Using Octree Maps and RGBD Cameras to Perform Mapping and A* Navigation
Peter Beňo, Vladimír Pavelka, František Duchoň, Martin Dekan
2. Agent-Based Cloud Computing Systems for Traffic Management
Jan Vascak, Jakub Hvizdoš, Michal Puheim
3. Neural Network Based Ball Tracking for Robot Nao
Denis Vereš, Rudolf Jakša, Jakub Hvizdoš
4. Network Based Linear Population Size Reduction in SHADE
Adam Viktorin, Michal Pluhacek, Roman Senkerik

5. Research on Failure Prognostics Method of Electronic System Based on Improved Fruit Fly Algorithm and Grey Fast Relevance Vector Machine *Kun Wu, Jianshe Kang, Xuan Wang*
6. Multi-sensor Fusion Approach for Fire Alarm Using BP Neural Network
Yan-Hua Liang, Wei-Min Tian

INCoS-S8: Machine Learning and Mining

Chair: Marek Ogiela, AGH University of Science and Technology, Krakow, Poland

1. A Behavioral Biometrics Based and Machine Learning Aided Framework for Academic Integrity in E-Assessment
Alexander Amigud, Joan Arnedo-Moreno, Thanasis Daradoumis, Ana-Elena Guerrero-Roldan
2. How to Solve Common Human Actions Recognition Use Cases with Gesture Description Language
Tomasz Hachaj
3. Knowledge Management Approaches for Data Understanding
Lidia Ogiela, Marek R. Ogiela
4. Using Exploratory Analysis Modeling to Study the Correlation between EEG Signal and Respiratory Rhythm
Xuan Guo, Yixiao Sun, Zhiting Xiao, Wenhui Wu
5. Identity Authentication System Based on Fingerprint Identification and Pulse Certification
Qian Xu, Jie Deng
6. New Differential Fault Attack on Lightweight Cipher LBlock
Yuechuan Wei, Yisheng Rong, Xu An Wang

ESN-S1: Evolution of Social Networks

Chair: Vaclav Snasel, Technical University of Ostrava, Czech Republic

1. Author Evaluation Based on H-Index and Citation Response
Miloš Kudělka, Jan Platoš, Pavel Krömer
2. Intelligent SMS Spam Filtering Using Topic Model
Jialin Ma, Yongjun Zhang, Jinling Liu, Kun Yu, XuAn Wang
3. A Rational Secret Sharing Relying on Reputation
Jianghao Jin, Xie Zhou, Chuangui Ma, Xu'an Wang
4. A Secure Private Information Retrieval in Cloud Environment
Yang HaiBin, Zhang Ling

IWCBS-S2: Intelligent Secure Collaborative e-Business Systems

Chair: Fatos Xhafa, Technical University of Catalonia, Spain

1. An Exact Method for Solving Selective Maintenance Problems Considering Imperfect Maintenance
Wenbin Cao, Wenyuan Song, Qiwei Hu, Yinxia Du
2. Some Practical Properties of AP14
Tanping Zhou, Xiaoyuan Yang, Xu'an Wang, Yiliang Han
3. Damage Effectiveness Evaluation on the Time Sensitive Group Targets for Trajectory Correction Missile Carrying with Terminal-Sensitive Projectiles
Jie Li, Hong Zhang
4. A Review of the Research Literature on Civil-Military Integration Equipment Support Reform in the United States and Its Enlightenment
Yan-Fei Zhang, Jun-Yan Wu, Jie Li, Wan-Yi Liu
5. The Infrared and Visible Light Image Fusion Based on the Non-subsample Shearlet Transform and Heat Source Concentration Ratio
Jie Luo, Weiwei Kong

6. Challenges in Efficient Customer Recognition in Contact Centre: State-of-the-Art Survey by Focusing on Big Data Techniques Applicability
Morteza Saberi, Anne Karduck, Omar Khadeer Hussain, Elizabeth Chang

16:00-16:30 Coffee Break

16:30-18:30 Parallel Sessions

INCoS-S9: Intelligent Algorithms for Scheduling, Resource Management and Image Processing

Chair: Xu An Wang, CAPF University, China

1. Wide Image Geometric Mosaic and Measure Algorithm of Mobile Mapping System
Wu Meng, Gao Yang, Guan Bin, Li Kui
2. Research of Web Resources Protection Based on Digital Watermarking and Digital Signature
Chun He
3. A Novel QoS-Aware Load Balancing Mechanism in Cloud Environment
Feng Ye, Shengyan Wu, Qian Huang, Xu An Wang
4. Binocular Stereo Vision Based Face Recognition Using Sparse Representation
Yang Liu, Yubo Yang, Jing Wang
5. Retail Commodity Sale Forecast Model Based on Data Mining
Jing Zhang, Juan Li

INCoS-S10: Secure Intelligent Collaborative Systems

Chair: Leonard Barolli, Fukuoka Institute of Technology, Japan

1. A Star-Topological Privacy Encryption for Telecare Medical Information Systems
Jing Li, Licheng Wang, Xinxin Niu
2. A New Approach to Security Analysis of Wireless Sensor Networks for Smart Home Systems
Miao Zhang, Yang Liu, Jiteng Wang, Yangyu Hu
3. Research and Design of Dedicated Instruction for Reconfigurable Matrix Multiplication of VLIW Processor
Su Yang, Wei Yuechuan, Zhang Mingshu
4. Non-transferable Unidirectional Proxy Re-Encryption Scheme for Secure Social Cloud Storage Sharing
Xu An Wang, Fatos Xhafa, Wei Hao, Wei He
5. Position Aware Mobility Pattern of AUVs for Avoiding Void Zone in Underwater WSNs
Mudassir Ejaz, Anwar Khan, Muhammad, Umar Qasim, Zahoor Ali Khan, Nadeem Javaid

19:00-21:00 Banquet Party

Dolni Vitkovice

Web-site: <http://www.dolnivitkovice.cz/>

Friday, September 9, 2016

INCoS-2016 Organizing Committee Meeting and Discussion

Time Table

NBIS-2016 and INCoS-2016 Session Schedule
September 7 - 9, 2016
Ostrava, Czech Republic

Wednesday (September 7, 2016)		ROOM 1	ROOM 2	ROOM 3	ROOM 4	ROOM 5	ROOM 6	ROOM 7	ROOM 8
Slot	Time	Registration							
Session 1	09:00 - 09:30	Opening Session							
Session 2	09:30 - 10:30	NBIS-2016 and INCoS-2016 Keynote I (Plenary Room)							
Coffee Break	10:30 - 11:00	Coffee Break							
Session 3	11:00 - 12:00	NBIS-2016 and INCoS-2016 Keynote II (Plenary Room)							
Lunch	12:00 - 13:30	Lunch Break							
Session 4	13:30 - 15:30	NBIS S1	NBIS S2	INWC S1	TWCSec S1	INCoS S1	INCoS S2	ALICE S1	FINCoS S1
Coffee Break	15:30 - 16:00	Coffee Break							
Session 5	16:00 - 18:00	NBIS S3	NBIS S4	HETNET S1	ISSE S1	INCoS S3	INCoS S4	WIND S1	IABP S1
Social Event	19:00 - 21:00	Welcome Reception Party							

Thursday (September 8, 2016)		ROOM 1	ROOM 2	ROOM 3	ROOM 4	ROOM 5	ROOM 6	ROOM 7	ROOM 8
Slot	Time	Registration							
Session 1	09:00 - 10:00	NBIS-2016 and INCoS-2016 Keynote III (Plenary Room)							
Coffee Break	10:00 - 10:30	Coffee Break							
Session 2	10:30 - 12:30	NBIS S5	NBIS S6	WSSM S1	INVITE S1	INCoS S5	INCoS S6	SecureSysComm S1	IWCBS S1
Lunch	12:30 - 14:00	Lunch Break							
Session 3	14:00 - 16:00	NBIS S7	ADPNA S1	WSSM S2	DEMoC S1	INCoS S7	INCoS S8	ESN S1	IWCBS S2
Coffee Break	16:00 - 16:30	Coffee Break							
Session 4	16:30 - 18:30					INCoS S9	INCoS S10		
Social Event	19:00 - 21:00	Banquet Party							

Friday (September 9, 2016)		ROOM 1	ROOM 2	ROOM 3	ROOM 4	ROOM 5	ROOM 6	ROOM 7	ROOM 8
Slot	Time	NBIS-2016 and INCoS-2016 Steering Committee Meeting and Discussion							