PROGRAM GUIDE



CISIS-2014

The 8th International Conference on Complex, Intelligent and Software Intensive Systems

and



IMIS-2014

The 8th International Conference on Innovative Mobile and Internet Services in Ubiquitous Computing

> July 2nd - July 4th, 2014 Birmingham City University Birmingham, UK

Technically Co-sponsored by:



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Welcome Message from the CISIS-2014 General Co-Chairs

Welcome to the 8-th International Conference on Complex, Intelligent and Software Intensive Systems (CISIS 2014), which will be held at Birmingham City University, Birmingham, UK from July 2 to July 4, 2014.

The aim of the conference is to deliver a platform of scientific interaction between the three interwoven challenging areas of research and development of future ICT-enabled applications: Software Intensive Systems, Complex systems and Intelligent Systems.

Software Intensive Systems are systems which heavily interact with other systems, sensors, actuators, devices, other software systems and users. More and more domains are involved with software intensive systems, e.g. automotive, telecommunication systems, embedded systems in general, industrial automation systems and business applications. Moreover, the outcome of web services delivers a new platform for enabling software intensive systems. The conference is thus focused on tools, practically relevant and theoretical foundations for engineering software intensive systems.

Complex Systems Research is focused on the overall understanding of systems rather than its components. Complex Systems are very much characterized by the changing environments in which they act and by their multiple internal and external interactions. They evolve and adapt through internal and external dynamic interactions.

The development of Intelligent Systems and agents, which is each time more characterized by the use of ontologies and their logical foundations build a fruitful impulse for both Software Intensive Systems and Complex Systems. Recent research in the field of intelligent systems, robotics, neuroscience, artificial intelligence, and cognitive sciences are very important factor for the future development and innovation of software intensive and complex systems.

The CISIS 2014 is aiming at delivering a forum for in-depth scientific discussions amongst the three communities. The papers included in the proceedings cover all aspects of theory, design and application of complex systems, intelligent systems and software intensive systems. The conference received 179 papers and accepted 50 papers (about 28 % acceptance rate), which were selected after a careful review process.

The organization of an International Conference requires the support and help of many people. A lot of people have helped and worked hard to produce a successful CISIS 2014 technical program and conference proceedings. First, we would like to thank all the authors for submitting their papers, the Program Committee Members, and the reviewers who carried out the most difficult work by carefully evaluating the submitted papers.

We are grateful to Honorary Chair Prof. Makoto Takizawa, Hosei University, Japan for his guidance and advices.

We would like to thank Dr. Philip Moore, Lanzhou University, China, Dr. Helio Santos Silva, Regional University of Blumenau, Brazil, and Dr. Olivier Terzo, Istituto Superiore Mario Boella, Torino, Italy as CISIS 2014 PC Co-Chairs for their efficient and timely work.

This year in conjunction with CISIS 2014 we have 10 International Workshops that complemented CISIS 2014 program with contributions for specific topics. We would like to thank the Workshop Co-Chairs: Dr. Andrew M. Thomas, Wales Centre for Behaviour Change, UK, Dr. Juggapong Natwichai, Chiang Mai University, Thailand, and Dr. Hsing-Chung Chen, Asia University, Taiwan and all workshops organizers for organizing these workshops.

We thank Dr. Makoto Ikeda and Mr. Tetsuya Oda, Fukuoka Institute of Technology, Japan for their excellent work and support as Web Administrators with the Web Submission and Management System of conference.

Finally, we would like to thank the Local Arrangement team of Birmingham City University for their support and good local arrangement for the conference.

We hope you will enjoy the conference and have a great time in Birmingham, UK.

CISIS 2014 General Co-Chairs

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

Welcome Message from the CISIS-2014 Program Committee Co-Chairs

Welcome to the 8-th International Conference on Complex, Intelligent and Software Intensive Systems (CISIS 2014), which will be held from July 2 to July 4, 2014 at Birmingham City University, Birmingham, UK in conjunction with IMIS 2014 International Conference.

This is the 8-th edition of the CISIS international conference which has consolidated the conference as an important international event in the interconnected fields of Complex Systems, Intelligent Systems, and Software Intensive Systems. The goal of the conference is to bring together researchers from the different fields whose work is related to the above three challenging areas of ICT-enabled applications.

The CISIS 2014 conference edition was organized in 17 research tracks. The objective was to address and cover each main theme of the Software Intensive Systems, Complex Systems, and Intelligent Systems with a specific research track. The program for this conference is the result of hard and excellent work of many people, including authors, external reviewers, program committee members, track chairs, and conference officers. This year, we have selected 50 quality contributions among 179 papers received (about 28% acceptance rate). We believe that all of these papers not only provide novel ideas, new results, work in progress, and state-of-the-art techniques in this field, but also stimulate future research activities in the area of Complex Systems, Intelligent Systems, and Software Intensive Systems.

A lot of people have helped and worked hard to produce a successful CISIS 2014 event. We would like to express our sincere appreciation to all of them for their cooperation in completing the conference program under a very tight schedule. Firstly, we would like to thank CISIS 2014 General Co-Chairs: Prof. Leonard Barolli, Fukuoka Institute of Technology, Japan and Prof. Fatos Xhafa, Technical University of Catalonia, Spain for bringing together this important event. We are grateful to Honorary Chair Prof. Makoto Takizawa, Hosei University, Japan. We would like to give special thanks to all Track Co-Chairs for their time, energy, and expertise to make CISIS 2014 very successful. Also, we thank the Program Committee Members and Reviewers for their hard work and their valuable comments that improved the quality of the presented papers. Last but not least, we would like also to thank Dr. Makoto Ikeda and Mr. Tetsuya Oda, Fukuoka Institute of Technology, Japan for their excellent work with the conference Web Site and Submission System management. Finally, we would like to thank the Local Arrangement Team of Birmingham City University for their support and good local arrangement for the conference.

We hope you will enjoy the conference and have a great time in Birmingham, UK.

CISIS 2014 Program Committee Co-Chairs Philip Moore, Lanzhou University, China Helio Santos Silva, Regional University of Blumenau, Brazil Olivier Terzo, Istituto Superiore Mario Boella, Torino, Italy

Welcome Message from the CISIS-2014 Workshop Co-Chairs

Welcome to the Workshops of the 8-th International Conference on Complex, Intelligent and Software Intensive Systems (CISIS 2014), which will be held at Birmingham City University, Birmingham, UK from July 2 to Jul 4, 2014. We are pleased that for this edition of CISIS International Conference we have 10 international workshops. Some of these workshops are in 5-th, 6-th, 7-th and 8-th editions. The objective was to complement as much as possible the main theme of CISIS 2014 with specific topics of different workshops in order to cover topics from the three challenging areas of ICT-enabled applications: Software Intensive Systems, Complex Systems and Intelligent Systems.

The list of workshops is as follows.

- 1. The 8-th International Workshop on Engineering Complex Distributed Systems (ECDS 2014)
- 2. The 7-th International Workshop on Engineering Parallel and Multi-Core Systems (ePaMus 2014)
- 3. The 7-th International Workshop on Intelligent Interfaces for Human-Computer Interaction (IIHCI 2014)
- 4. The 7-th International Workshop on Intelligent Informatics in Biology and Medicine (IIBM 2014)
- 5. The 6-th International Workshop on Virtual Environment and Network-Oriented Applications (VENOA 2014)
- 6. The 4-th International Workshop on the Application of Intelligent Context-Awareness (AICA 2014)
- 7. The 5-th International Workshop on Autonomic Distributed Systems (ADiS 2014)
- 8. The 5-th International Workshop on Interactive Environments and Emerging Technologies for eLearning (IEETeL 2014)
- 9. The 4-th Semantic Web/Cloud Information and Services Discovery and Management (SWISM 2014)
- 10. The 4-th International Workshop on Intelligent Computing In Large-Scale Systems (ICLS 2014)

These workshops bring to the researchers conducting research in specific themes the opportunity to learn from this rich multi-disciplinary experience. The Workshop Co-Chairs would like to thank CISIS 2014 International Conference Organizers for their help and support. We are grateful to the workshops organizers for their great efforts and hard work in proposing the workshops, selecting the papers, the interesting programs and for the arrangements of the workshops during the conference days. We are grateful to Dr. Makoto Ikeda and Mr. Tetsuya Oda, Fukuoka Institute of Technology, Japan for their excellent work and support as Web Administrators. We would like to give special thanks to the Local Organization Team of Birmingham City University, Birmingham, UK.

We hope you enjoy the workshops programs and proceedings.

CISIS 2014 Workshop Co-Chairs

Andrew M. Thomas, Wales Centre for Behaviour Change, UK Juggapong Natwichai, Chiang Mai University, Thailand Hsing-Chung Chen, Asia University, Taiwan

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CISIS-2014 Conference Track Chairs

Track 1: Parallel Computing

Alexey Chepstov, High Performance Computing Center Stuttgart (HLRS), Germany Rajdeep Bhowmik, Cisco Systems, Inc, USA Andrea Schwertner Charao, Department of Languages and Computer Systems / CT / UFSM, Brazil Alfredo Cuzzocrea, ICAR-CNR & University of Calabria, Italy

Track 2: Database and Data Mining Applications

Jagdev Bhogal, Birmingham City University, UK Antonio Parodi, CIMA Research Foundation, Italy MingXue Wang, Ericsson, Ireland

Track 3: Artificial Intelligence and Optimization

Tahar Kachadi, UCD Dublin, Ireland Mikhail Simonov, Istituto Superiore Mario Boella, Italy

Track 4: Multimedia Systems and Virtual Reality

Noriki Uchida, Saitama Institute of Technology, Japan Mohan S Kankanhalli, National University of Singapore, Singapore

Track 5: Systems for Biological and Medical Applications

Paul Fergus, Liverpool John Moores University, UK Salvatore Vitabile, University of Palermo, Italy

Track 6: E-Learning and Groupware Systems

Thomas lancaster, Birmingham City University, UK Ravindra Dastikop, SDM College of Engineering and Technolgy, India

Track 7: Wireless Sensor, Ad Hoc, and Mesh Networks

Moacyr Martucci Jr, University of Sao Paulo, BR Agustinus Borgy Waluyo, Monash University, Australia

Track 8: Semantic Web, Web Services, and Data Integration

David Newell, Bournmouth University, UK Rachid Anane, Coventry University, UK

Track 9: Autonomic Computing and Communication

Ciprian Dobre, Politehnica University of Bucharest, Romania Markus Alesky, ABB AG Corporate Research Center, Germany Mohammad Younas, Oxford Brookes University, UK

Track 10: Socially Inspired Computing and Computational Intelligence

Philip Davies, Bournemouth and Poole College, UK Serguei Dobrinevski, Hypersoft Information Systems, Germany Xiangfeng Luo, Shanghai University, China

Track 11: Security and Trusted Computing

Mark Leeson, University of Warwick, UK Sergio Loureiro, SECLUDIT, France Giuseppe Persiano, University of Salerno, Italy Agusti Solanas, Rovira i Virgili University, Spain

Track 12: Energy Aware Information Systems

Tomoya Enokido, Rissho University, Japan William Campbell, Birmingham City University, UK Rodrigo Neves Calheiros, University of Melbourne, Australia

Track 13: P2P and Grid Data Technologies

Lorenzo Mossucca, Istituto Superiore Mario Boella, Torino, Italy Zhe Wang, Edinburgh Napier University, UK Yannick Legre, Institut des Grilles et du Cloud, FR

Track 14: Adaptive and Evolvable Human Computing Interfaces

Cristina Gena, Universita di Torino, Italy Philip Moore, Lanzhou University, China

Track 15: Complex Systems and Software Modeling and Analytics

Ioan Lucian Muntean, Universitatea Tehnica Cluj-Napoca, Romania Cho-Li-Wang, University of Hong Kong, HK

Track 16: High Performance Modelling and Simulation

Jackie Riley, Glasgow Caledonian University, UK

Track 17: Collaborative Learning using Social Networks

Santi Caballe, Open University of Catalonia, Spain David Britch, CM Group, UK

Welcome Message from the IMIS-2014 General Co-Chairs

Welcome to the 8-th International Conference on Innovative Mobile and Internet Services in Ubiquitous Computing (IMIS 2014), which will be held from July 2 to July 4, 2014 at Birmingham City University, Birmingham, UK. The IMIS-2014 is held in conjunction with the 8-th International Conference on Complex, Intelligent and Software Intensive Systems (CISIS 2014).

The IMIS 2043 International Conference focuses on the challenges and solutions for Ubiquitous and Pervasive Computing (UPC) with an emphasis on innovative, mobile and internet services. With the proliferation of wireless technologies and electronic devices, there is a fast growing interest in UPC. UPC enables to create a human-oriented computing environment where computer chips are embedded in everyday objects and interact with physical world. Through UPC, people can get online even while moving around, thus having almost permanent access to their preferred services. With a great potential to revolutionize our lives, UPC also poses new research challenges. The conference provides an opportunity for academic and industry professionals to discuss the latest issues and progress in the area of UPC.

The IMIS 2014 received many paper submissions from all over the world. The papers included in the proceedings cover important aspects from UPC research domain. This year, we received 162 submissions and after a careful review process of 3 independent reviews per submission, 45 papers were accepted (about 28% acceptance rate).

It is impossible to organize such a successful program without the help of many individuals. We would like to express our great appreciation to the authors of the submitted papers, the program committee members, who provided timely and significant reviews, and special session chairs for their great efforts. We are grateful to Honorary Chair Prof. Makoto Takizawa, Hosei University, Japan for his advices and support. We would like to thank Dr. Hae-Duck Joshua Jeong, Korean Bible University, Korea, Dr. Aniello Castiglione, University of Salerno, Italy, and Dr. Philip Moore, Lanzhou University, China as IMIS 2014 PC Co-Chairs for their efficient and timely work.

This year in conjunction with IMIS 2014 we have 8 International Workshops that complemented IMIS 2014 program with contributions for specific topics. We would like to thank the Workshop Co-Chairs Dr. Yuh-Shyan Chen, National Taipei University, Taiwan, Dr. Baokang Zhao, National University of Defense Technology, China, and Prof. Fang-Yie Leu, Tunghai University, Taiwan and all workshop organizers for organizing these workshops.

We thank Dr. Makoto Ikeda and Mr. Tetsuya Oda, Fukuoka Institute of Technology, Japan for their excellent work and support as Web Administrators.

Finally, we would like to thank the members of the Local Arrangement Team of Birmingham City University for their support and good local arrangement for the conference.

We hope that all of you enjoy IMIS 2014 and find this a productive opportunity to learn, exchange ideas and make new contacts.

IMIS 2014 General Co-Chairs Ilsun You, Korean Bible University (KBU), Korea Leonard Barolli, Fukuoka Institute of Technology (FIT), Japan

Welcome Message from the IMIS-2014 Program Committee Co-Chairs

As PC Co-Chairs, we would like to welcome you to the 8-th International Conference on Innovative Mobile and Internet Services in Ubiquitous Computing (IMIS 2014), which will be held from July 2 to July 4, 2014 at Birmingham City University, Birmingham, UK in conjunction with the 8-th International Conference on Complex, Intelligent and Software Intensive Systems (CISIS 2014).

This is the 8-th edition of the IMIS International Conference, which is growing every year in quality and quantity. The goal of the conference is to bring together researchers from the different fields related to Ubiquitous and Pervasive Computing (UPC). The IMIS 2014 International Conference is organized in 12 research tracks, which address and cover each main theme of UPC with a specific set of research topics. The program for this conference is the result of hard and excellent work of many people, including authors, external reviewers, program committee members, track chairs, and conference officers. This year, we have selected 45 quality contributions among 162 papers received (about 28% acceptance rate). We believe that all of the papers selected not only provide novel ideas, new results, work in progress, and state-of-the-art techniques in this field, but also stimulate future research activities in the area of UPC.

As PC Co-Chairs, we would like to thank the many people that helped and worked hard to produce a successful IMIS 2014 event this year. We would like to express our sincere appreciation to all of them for their cooperation. Firstly, we would like to thank IMIS 2014 General Co-Chairs: Dr. Ilsun You, Korean Bible University, Korea and Prof. Leonard Barolli, Fukuoka Institute of Technology, Japan for bringing together this important event. We are grateful to Honorary Chair Prof. Makoto Takizawa, Hosei University, Japan for his advices and support. We would like to give special thanks to all Track Co-Chairs for their time, energy, and expertise to make IMIS 2014 very successful. Also, we thank the Program Committee Members and Reviewers for their hard work and valuable comments that improved the quality of the presented papers. We would like to give special thanks to Dr. Makoto Ikeda and Mr. Tetsuya Oda, Fukuoka Institute of Technology, Japan for their excellent work as Web Administrators. Finally, we would like to thank the Local Arrangement Team of Birmingham City University for their support and good local arrangement for the conference.

We hope you will enjoy the conference and hope to see you in forthcoming editions.

IMIS 2014 Program Committee Co-Chairs Hae-Duck Joshua Jeong, Korean Bible University, Korea Aniello Castiglione, University of Salerno, Italy Philip Moore, Lanzhou University, China

Welcome Message from the IMIS-2014 Workshop Co-Chairs

Welcome to the Workshops of the 8-th International Conference on Innovative Mobile and Internet Services in Ubiquitous Computing (IMIS 2014), which will be held from July 2 to July 4, 2014 at Birmingham City University, Birmingham, UK in conjunction with the 8-th International Conference on Complex, Intelligent and Software Intensive Systems (CISIS 2014).

This year we are proud to present 9 workshops, which will be held together with IMIS 2014. The objective was to complement as much as possible the main themes of IMIS 2014 with the specific topics of the different workshops to cover many topics of Ubiquitous and Pervasive Computing (UPC). The list of workshops follows below:

- 1. The 8-th International Workshop on Advances in Information Security (WAIS 2014)
- 2. The 4-th International Workshop on Mobile Commerce, Cloud Computing, Network and Communication Security (MCNCS 2014)
- 3. The 4-th International Workshop on Future Internet and Next Generation Networks (FIN-GNet 2014)
- The 4-th International Workshop on Advanced Communication Technologies and Applications to Intelligent transportation systems, Cognitive radios and Sensor networks (ACTICS 2014)
- 5. The 4-th International Workshop on Intelligent Techniques and Algorithms for Ubiquitous Computing (ITAUC 2014)
- 6. The 3-rd International Workshop on Sustainability Management of e-Business and Ubiquitous Commerce Engineering (SMEUCE 2014)
- 7. The 3-rd International Workshop on Extending Seamlessly to the Internet of Things (esIoT 2014)
- 8. The 2-nd International Workshop on Practical Security Issues in Public Internet Services (PSIPIS 2014)

We would like to thank IMIS 2014 International Conference Organizers for their help and support. We are grateful to the workshop organizers for their great efforts and hard work in proposing the workshops, selecting the papers, organizing interesting programs, and for the arrangements of the workshops during the conference days.

We are grateful to Dr. Makoto Ikeda and Mr. Tetsuya Oda, Fukuoka Institute of Technology, Japan for their excellent work and support as Web Administrators. We would also like to give special thanks to the Local Organization Team of Birmingham City University.

We hope you enjoy the workshops programs and proceedings.

IMIS 2014 Workshop Co-Chairs

Yuh-Shyan Chen, National Taipei University, Taiwan Baokang Zhao, National University of Defense Technology, China Fang-Yie Leu, Tunghai University, Taiwan

IMIS-2014 Conference Organizing Committee

Honorary Co-Chairs

Makoto Takizawa, Hosei University, Japan

General Co-Chairs

Ilsun You, Korean Bible University, Korea Leonard Barolli, Fukuoka Institute of Technology, Japan

Program Committee Co-Chairs

Hae-Duck Joshua Jeong, Korean Bible University, Korea Aniello Castiglione, University of Salerno, Italy Philip Moore, Lanzhou University, China

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Yuh-Shyan Chen, National Taipei University, Taiwan Baokang Zhao, National University of Defense Technology, China Fang-Yie Leu, Tunghai University, Taiwan

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Web Administrator Chair

Makoto Ikeda, Fukuoka Institute of Technology, Japan Tetsuya Oda, Fukuoka Institute of Technology, Japan

IMIS-2014 Conference Track Chairs

Track 1: Smart Spaces and Intelligent Environments

Giovanni Acampora, Nottingham Trent University, UK Hani Hagras, University of Essex, UK

Track 2: Embedded Systems and Multicore for Cloud Computing

Chao-Tung Yang, TungHai University, Taiwan Lizhe Wang, Chinese Academy of Sciences, China

Track 3: Context and Location-aware Computing

Massimo Ficco, Second University of Naples, Italy Costin Badica, University of Craiova, Romania

Track 4: Data Management in Pervasive systems

Xingjun Zhang, Xi'an Jiaotong University, China Victor Lee, The City University of Hong Kong, China

Track 5: Security, Trust and Privacy

Mauro Migliardi, University of Padua, Italy Alessio Merlo, University of Genoa and University E-campus, Italy

Track 6: Energy Aware Pervasive Systems and Green Computing

Francesco Palmieri, Second University of Naples, Italy Sergio Ricciardi, Universitat Politecnica de Catalunya, Spain

Track 7: Smart City and Disaster Resilient System

Noriki Uchida, Saitama Institute of Technology, Japan Nik Bessis, University of Derby, United Kindom

Track 8: Smartphone Applications for UPC

Yann Bocchi, University of Applied Sciences Western Switzerland, Switzerland Gianluca Rizzo, University of Applied Sciences Western Switzerland, Switzerland

Track 9: Track 9: Internet, Wireless and Mobile Networks for UPC

Antonio J. Jara, University of Applied Sciences Western Switzerland, Switzerland Dominique Genoud, University of Applied Sciences Western Switzerland, Switzerland

Track 10: Distributed System and Cloud Computing

Zhuzhong Qian, Nanjing University, China Shih-Hao Hung, National Taiwan University, Taiwan

Track 11: Intelligent Technologies and Applications on Big Data

Myunggwon Hwang, Korea Institute of Science and Technology Information (KISTI), Korea Hanmin Jung, Korea Institute of Science and Technology Information (KISTI), Korea

Track 12: Service-Centric Networking for Innovative Cloud Services and Applications

Tobias Hossfeld, University of Wuerzburg, Germany Sergios Soursos, Intracom S.A. Telecom Solutions, Greece

CISIS IMIS-2014 Keynote 1

Prof. Alfredo De Santis, University of Salerno, Italy

New Frontiers in Anomaly Detection: Staying Tuned with Emerging Security Threats

Abstract: With the widespread development of the Internet and the ever increasing success of network-centric applications in substantially any sector of the everyday 's life, the need of detecting and preventing network-originated abuses in real time is more and more important, in order to guarantee appropriate protection and reaction capabilities against the huge amount of emerging security threats. Many solutions and tools are already available for checking the traffic flows and spotting anomalous usage patterns or malicious behaviors, but most of them are substantially unable to cope with unknown phenomena (e.g., 0-day attacks). In fact, the concept of normal or anomalous behavior is a very elusive one, since it depends on a large number of variable factors, often not immediately evident, associated to usual network activities and resource usage. Hence, a new generation of self-learning models that adaptively consider and understand the hidden relationships between these factors and the innermost dynamics underlying the involved networks and applications, is needed in order to effectively recognize security threats and react to them. Accordingly the main focus of this keynote is outlining, by starting from a survey of the currently available approaches, the new direction for future developments in anomaly detection. This will be accomplished by considering the problem from several perspectives, ranging from the traditional analysis techniques, based on acquiring knowledge about normal and anomalous events through a statistical idealization of past observations, to newer approaches based on chaos theory and nonlinear analysis. The latter approaches can be more helpful in understanding the above phenomena by observing them simultaneously on multiple time scales, thanks to the projection of the observations in a multi-dimensional and more feature-rich space. All these techniques are empowered and complemented by a host of methodologies originally born in the machine-learning framework and adapted for providing a deterministic interpretation of the complex traffic dynamics associated to normal and anomalous events. Additional future research opportunities originate from the consideration that different properties and criteria could be applied for inferring more sophisticated traffic features, that can be used to obtain a deeper and more comprehensive understanding about traffic profiles associated to security-related events.

CISIS IMIS-2014 Keynote 2

Dr. Horacio Gonzalez-Velez, Associate Professor and Head of the Cloud Competency Centre National College of Ireland, Ireland

Elastic Algorithmic Skeletons: Enhancing Structured Parallel Programming for Clouds and GPUs

Abstract: This talk presents an overview on how to efficiently program structured parallel applications for heterogeneous architectures (e.g. clouds or GPUs) by introducing elasticity through autonomic resource awareness. Widely considered as the logical successor of the Internet, the cloud computing entails the exchange of computers and data resources across global networks. It constitutes a new value-added paradigm for network computing where higher efficiency, massive scalability, and speed rely on effective software development. Furthermore, GPUs and other non-traditional accelerators have helped to enhance parallel application performance at a significant software development cost. Nevertheless, it has become evident that improved programming models are needed. This talk reports on research endeavors which incorporate structural information into a parallel application by employing algorithmic skeletons. Skeletons abstract commonly-used patterns of parallel computation, communication, and interaction. By means of resource awareness, skeletons can help structured parallel applications to adapt to the most suitable computing resources regardless of its architectural nature, whilst minimizing the associated costs and time.

CISIS IMIS-2014 Keynote 3

Ms. Reka Balogh and Mr. Rob Porter, Cisco Systems, UK

Software Defined networks

Abstract: The rapid and evolving developments in computerized IT systems place ever increasing demands on customers and their IT departments to deliver: new ways of providing services, applications and innovating to remain competitive while addressing the increased complexity that characterizes IT systems.

In meeting these challenges, which include: management complexity, sprawl of equipment and scaling issues, the nature of the challenges and potential solutions must be considered. For example, an IDC Report in 2011 identifies that: infrastructure to support these demands will grow 10 times its current size before 2020, however, the growth in trained staff is expected to be only 10

One such approach which is gaining traction is: Software Defined Networking (SDN). This approach to the provision of network services is perceived by many to be the ideal solution given the rapid evolution in the client and user demands. We will provide insight into what the industry means by SDN, the different approaches that are in the market, how it is influencing customers, research opportunities, hardware providers, job roles, skills requirements, new businesses and ultimately the impact it has on industry and commerce.

We will conclude the discussion by considering the innovations we are currently investigating bringing to market. Cisco Systems has been preparing for this transition in the industry for over 5 years and has introduced a number of different approaches, including both hardware and software based solutions. These innovations will be discussed in detail with the reasons why Cisco Systems view them as the future of SDN.



CISIS-2014 Main Conference and Workshops Program

Wednesday, July 2, 2014

08:00 Registration

09:00-10:30 Single Session: Opening and CISIS - IMIS -2014 Keynote 1

CISIS IMIS-2014 Keynote Talk

Prof. Alfredo De Santis: New Frontiers in Anomaly Detection: Staying Tuned with Emerging Security Threats

10:30-11:00 Coffee Break

11:00-12:30 Parallel Sessions

CISIS-S1: Intelligent Systems - Room 1

Chair: Leonard Barolli, Fukuoka Institute of Technology, Japan

- 1. Midwife: CPU Cluster Load Distribution of Virtual Agent AIs Ovi Chris Rouly
- 2. Performance Evaluation of WMN-HC System for Different Number of Mesh Clients and Mesh Routers
 - Evjola Spaho, Xinyue Chang, Tetsuya Oda, Makoto Ikeda, Leonard Barolli, Fatos Xhafa
- 3. Genetic Algorithm for the Column Subset Selection Problem Pavel Kromer, Jan Platos, Vaclav Snasel
- WMN-GA for Node Placement in WMN: Evaluation and Visualization Using HotSpot Ad-Hoc Method Admir Barolli, Tetsuya Oda, Evjola Spaho, Leonard Barolli, Fatos Xhafa, Makoto Takizawa

CISIS-S2: Ad-Hoc and Vehicular Networks - Room 2

Chair: Bhed Bahadur Bista, Iwate Prefectural University, Japan

- 1. Matching Services with Users in Opportunistic Network Environments Anthony Smith, Stuart Berry, Richard Hill
- 2. Performance Comparison of OLSR Protocol by Experiments and Simulations for Different TC Packet Intervals

Masahiro Hiyama, Shinji Sakamoto, Elis Kulla, Makoto Ikeda, Santi Caballe, Leonard Barolli

- 3. Vehicle-to-Vehicle Connectivity and Communication Framework for Vehicular Ad-Hoc Networks Danda B. Rawat, Bhed B. Bista, Gongjun Yan, Stephan Olariu
- 4. Performance Analysis of Vehicular DTN Routing under Urban Environment Seiichiro Ishikawa, Taiki Honda, Makoto Ikeda, Leonard Barolli

CISIS-S3: E-Learning and Groupware Systems - Room 3

Chair: Santi Caballe, Open University of Catalonia, Spain

- An Observational Analysis of the Range and Extent of Contract Cheating from Online Courses Found on Agency Websites Thomas Lancaster, Robert Clarke
- 2. A Methodological Approach to Provide Effective Web-Based Training by Using Collaborative Learning and Social Networks Santi Caballe, David Britch, Leonard Barolli, Fatos Xhafa
- 3. Towards an Emotion Labeling Model to Detect Emotions in Educational Discourse Marta Arguedas, Thanasis Daradoumis, Fatos Xhafa
- 4. Adaptivity in E-Learning Systems Mohammad Alshammari, Rachid Anane, Robert J. Hendley

W-IIBM-S1: Intelligent Informatics in Biology and Medicine I - Room 4

Chair: Oliver Ray, University of Bristol, UK

- 1. Epitope and Paratope Region Analysis Ying-Tsang Lo, Tun-Wen Pai, Hui-Huang Hsu, Huai-Kuang Tsai
- 2. Transcriptome Data Visualization in Pathways with Application to Zebrafish Embryo Datasets Chien-Ming Chen, Kuan-Jung Lai, Tun-Wen Pai, Hao-Teng Chang
- 3. A Machine Learning Approach to Objective Cardiac Event Detection N. Twomey, P.A. Flach
- 4. Logical Modelling of Inhibition and Competition in Biochemical Networks Oliver Ray, Robert Rozanski
- 5. A Distributed System Using MS Kinect and Event Calculus for Adaptive Physiotherapist Rehabilitation

Stefano Bragaglia, Stefano Di Monte, Paola Mello

12:30-13:30 Lunch Break

13:30-15:00 Parallel Sessions

CISIS-S4: Biological and Medical Applications - Room 1

Chair: Salvatore Vitabile, University of Palermo, Italy

- 1. Coupling between In Vivo Endomicroscopic Imaging and Visualization Computing Muhammad Mobeen Movania, Feng Lin
- 2. Advance Artificial Neural Network Classification Techniques Using EHG for Detecting Preterm Births

Ibrahim Olatunji Idowu, Paul Fergus, Abir Hussain, Chelsea Dobbins, Haya Al-Askar

- 3. Implementation of a Medical Support System Considering P2P and IoT Technologies Vladi Kolici, Evjola Spaho, Keita Matsuo, Santi Caballe, Leonard Barolli, Fatos Xhafa
- 4. A Novel Expert System for Non-invasive Liver Iron Overload Estimation in Thalassemic Patients Alfonso Farruggia, Luca Agnello, Patrizia Toia, Elena Murmura, Maria Russo, Emanuele Grassedonio, Massimo Midiri, Salvatore Vitabile

CISIS-S5: Wireless Mesh and Sensor Networks - Room 2

Chair: Yoshitaka Shibata, Iwate Prefectural University, Japan

1. Node Placement in WMNs Using WMN-GA System Considering Uniform and Normal Distribution of Mesh Clients

Tetsuya Oda, Shinji Sakamoto, Evjola Spaho, Admir Barolli, Leonard Barolli, Fatos Xhafa

- 2. Co-operative Mobile Sensor Environment Using Wireless Plug and Play Network Go Hirakawa, Phyu Phyu Kywe, Kenta Ito, Yoshitaka Shibata
- 3. Evaluation of Effects of Grid Shape in WMN-SA System for Solution of Node Placement Problem in WMNs

Shinji Sakamoto, Tetsuya Oda, Elis Kulla, Fatos Xhafa, Makoto Ikeda, Leonard Barolli

CISIS-S6: Security and Identification - Room 3

Chair: Fatos Xhafa, Technical University of Catalonia, Spain

- 1. Function Level Control Flow Obfuscation for Software Security Vivek Balachandran, Ng Wee Keong, Sabu Emmanuel
- 2. Investigating Security Issues in Cloud Computing Tumpe Moyo, Jagdev Bhogal
- 3. Towards a Normalized Trustworthiness Approach to Enhance Security in On-Line Assessment Jorge Miguel, Santi Caballe, Fatos Xhafa, Josep Prieto, Leonard Barolli
- A Novel Technique for Fingerprint Classification Based on Fuzzy C-Means and Naive Bayes Classifier G. Vitello, F. Sorbello, G.I.M. Migliore, V. Conti, S. Vitabile

W-AICA-S1: Applications of Intelligent Context-Awareness - Room 4

Chair: Philip Moore, Lanzhou University, China

- 1. Context-as-a-Service: A Service Model for Cloud-Based Systems Philip Moore, Fatos Xhafa, Leonard Barolli
- 2. An Intelligent Context-Aware Decision-Support System Oriented towards Healthcare Support Bogdan Manate, Victor Ion Munteanu, Teodor-Florin Fortis, Philip T. Moore
- 3. Developing a Mobile Business Intelligence Application Sathyanath Lappasi Ramamoorthy, Jagdev Bhogal
- 4. Exploring Sustainable Development Opportunities within the School Environment Saba Janjua, Arshad Mahmood

15:00-15:30 Coffee Break

15:30-17:00 Parallel Sessions

CISIS-S7: Energy Saving and Green IT - Room 1

Chair: Makoto Takizawa, Hosei University, Japan

- 1. A Power Reduction Method in a House Considering Comfortability Tatsuya Sato, Akio Koyama, Shuji Shoji, Leonard Barolli, Makoto Takizawa
- Balancing Power Consumption in IoT Devices by Using Variable Packet Size M. Domingo-Prieto, B. Martinez, M. Monton, I. Vilajosana-Guillen, X. Vilajosana-Guillen, J. Arnedo-Moreno
- 3. A Cross-Cultural Survey of the Impact of Organizational Culture on Adoption of Green IT Abbas Kolawole Akano, William Campbell
- 4. Power Consumption Models for Redundantly Performing Mobile-Agents Dilawaer Duolikun, Ailixier Aikebaier, Tomoya Enokido, Makoto Takizawa

CISIS-S8: P2P Systems - Room 2

Chair: Leonard Barolli, Fukuoka Institute of Technology, Japan

- 1. Modeling of Integrated Pollution in P2P System Jie Kong, Dong Zhong
- 2. BuddyFS: A File-System to Improve Data Deduplication in Virtualization Environments Nirandika Wanigasekara, Chamath I. Keppittiyagama
- 3. A Fuzzy-Based Reliability System for P2P Communication Considering Local Score, Number of Authentic Files, and Number of Interactions Parameters Yi Liu, Evjola Spaho, Makoto Ikeda, Fatos Xhafa, Santi Caballe, Leonard Barolli

CISIS-S9: Cloud Computing and Simulation Tools - Room 3

Chair: Horacio Gonzalez-Velez, Cloud Competency Centre at National College of Ireland, Ireland

- 1. Hierarchical Multi-log Cloud-Based Search Engine Ajitpal Singh, Horacio Gonzalez-Velez
- Cloud Computing Architecture for Monitoring and Flood Warning System: Conceptual Aspects Marcos Rodrigo Momo, Helio Dos Santos Silva, Eduardo Gomez Sanchez, Dirceu Luis Severo, Ademar Cordero, Julio Cesar Refosco
- 3. Simulation, Modeling, and Performance Evaluation Tools for Cloud Applications Klodiana Goga, Olivier Terzo, Pietro Ruiu, Fatos Xhafa
- CLEVERsim: A Declarative, Event-Driven Simulator for the Investigation of Large Scale M2M Scenarios Terence Song Dritan Kaleshi

Terence Song, Dritan Kaleshi

W-ECDS-S1: Distributed Systems and Applications - Room 4

Chair: Kin Fun Li, University of Victoria, Canada

- 1. Engineering Distributed Intelligence: Issues and Challenges $Kin\ Fun\ Li$
- 2. Performance Evaluation of a Touring System Kaoru Sugita, Ken Nishimura

- 3. Situation-Aware Group Communication Protocols Hiroki Nakayama, Dilawaer Duolikun, Ailixier Aikebaier, Tomoya Enokido, Makoto Takizawa
- 4. A Presentation Framework to Simplify the Development of Java EE Application Thin Clients Santi Caballe, Jose-Arturo Ortega, Josep-Maria Camps, Leonard Barolli, Elis Kulla, Evjola Spaho
- 5. A Reputation System Resisting to Undercover Marketing *Fumiaki Sato*

19:30-21:30 Welcome Reception Party Place: Copthorne Hotel in Birmingham

Address: Paradise Circus, Birmingham, West Midlands, B3 3HJ

Thursday, July 3, 2014

08:00 Registration

09:00-10:00 Single Session: CISIS - IMIS-2014 Keynote 2

CISIS - IMIS-2014 Keynote Talk

Dr. Horacio Gonzalez-Velez: Elastic Algorithmic Skeletons: Enhancing Structured Parallel Programming for Clouds and GPUs

10:00-10:30 Coffee Break

10:30-12:00 Parallel Sessions

CISIS-S10: E-Learning and Social Networking - Room 1

Chair: Santi Caballe, Open University of Catalonia, Spain

- 1. The Complexity of University Curricula According to Course Cruciality Ahmad Slim, Jarred Kozlick, Gregory L. Heileman, Chaouki T. Abdallah
- 2. A Systematic Review of Multimedia Resources to Support Teaching and Learning in Virtual Environments

David Ganan, Santi Caballe, Jordi Conesa, Leonard Barolli, Elis Kulla, Evjola Spaho

- 3. Characterizing Social Network E-Assessment in Collaborative Complex Learning Resources Nestor Mora, Santi Caballe, Thanasis Daradoumis, Leonard Barolli, Elis Kulla, Evjola Spaho
- Facilitating Intuitive-Guided Learning in a Serious Game through Integration with a Learning Content Management System Ian Dunwell, Petros Lameras, Panagiotis Petridis, Sylvester Arnab, Sara De Freitas

CISIS-S11: Network Algorithms and Protocols - Room 2

Chair: Tomoya Enokido, Rissho University, Japan

- 1. Simple Deadlock Detection for the And-Communication Model Michel Raynal
- 2. Synchronization Protocols to Prevent Illegal Information Flow in Role-Based Access Control Systems Shigenari Nakamura, Dilewaer Doulikun, Ailixier Aikebaier, Tomoya Enokido, Makoto Takizawa
- 3. A Proxy-Based Solution for Interoperability of Smart Home Protocols Heldon Jose Oliveira Albuquerque, Gibeon Soares de Aquino Junior
- 4. The Delay Time-Based (DTB) Algorithm for Energy-Efficient Server Cluster Systems Tomoya Enokido, Makoto Takizawa, S. Misbah Deen

W-ICLS-S1: Scheduling, Query, and Identification - Room 3

Chair: Giovanni Morana, Catania University, Italy

- 1. A Multi-agent System for the Flight Quality Analysis Teodor-Florin Fortis, Alexandra Emilia Fortis, Stefan Balint
- 2. An Agent Based Architecture for VM Software Tracking in Cloud Federations Fabrizio Messina, Giuseppe Pappalardo, Domenico Rosaci, Giuseppe M.L. Sarne

- 3. A Trust Model for Competitive Cloud Federations Fabrizio Messina, Giuseppe Pappalardo, Domenico Rosaci, Corrado Santoro, Giuseppe M.L. Sarne
- 4. A Workflow Management System to Enforce QoS in IaaS Cloud Environments A. Di Stefano, G. Morana, D. Zito
- 5. An Investigation of Packet Concatenation in Sensor Networks Kien Nguyen, Yusheng Ji, Shigeki Yamada

W-ePaMus-S1: Engineering Parallel and Multi-Core Systems - Room 4

Chair: Gul N. Khan, Ryerson University, Canada

- 1. An Approximate Method for Throughput Evaluation of Cyclo-static Dataflow Programs Pascal Aubry, Mohamed Benazouz, Renaud Sirdey
- 2. Hierarchical Synchronization between Processes in a High-Performance Execution Support of Dataflow Process Networks on Many-Core Architectures Dang-Phuong Nguyen, Thanh-Hai Nguyen, Paul Dubrulle
- 3. Dynamic Virtual Channel Configuration for Efficient Multicore Systems Masoud Oveis Gharan, Gul N. Khan
- Scalability of a Parallel Application in Hybrid Cloud
 Garagnano, K. Goga, P. Ruiu, L. Mossucca, O. Terzo, G. Ghafour Zadeh Kashani

12:00-13:30 Lunch Break

13:30-15:00 Parallel Sessions

CISIS-S12: Data Extraction and Modeling - Room 1

Chair: Hiroaki Nishino, Oita University, Japan

- A 3D Authoring Method by Editing Real World Scene Jiaqing Lin, Hiroaki Nishino, Tsuneo Kagawa
- 2. Extraction, Identification, and Ranking of Network Structures from Data Sets Marcello Trovati, Nik Bessis, Anna Huber, Asta Zelenkauskaite, Eleana Asimakopoulou
- 3. On Automatically Extracting Discoveries from User Generated Content Kenneth Cosh
- 4. Exploring the Hidden Challenges Associated with the Evaluation of Multi-class Datasets Using Multiple Classifiers Shamaila Iram, Dhiya Al-Jumeily, Paul Fergus, Abir Hussain

W-SWISM-S1: Semantic Cloud and IoT - Room 2

Chair: Beniamino Di Martino, Second University of Naples, Italy

- 1. Collective Ontologies Design and Development Tatiana A. Gavrilova, Irina A. Leshcheva
- 2. Towards a Unified OWL Ontology of Cloud Vendors' Appliances and Services at PaaS and SaaS Level
 - Beniamino Di Martino, Giuseppina Cretella, Antonio Esposito
- 3. A Semantic Support for Testing Activities of Safety-Critical Embedded Systems Alessio Venticinque, Nicola Mazzocca, Salvatore Venticinque
- 4. Towards a Smarter Internet of Things: Semantic Visions Bogdan Manate, Victor Ion Munteanu, Teodor-Florin Fortis

W-IIHCI-S1: Intelligent Environments - Room 3

Chair: Salvatore Vitabile, University of Palermo, Italy

- 1. A Dynamic User Interface for Transit Tracking Applications Craig M. Gelowitz, Raman Paranjape
- 2. A Novel Multimedia Interactive System for Public Show and Presentations Marco Gaudina, Simone Schiappacasse, Luca Lagomarsino, Edoardo Bellanti, Gianni Vercelli
- 3. Repetitive Drag & Drop of AR Objects: A Pilot Study Giacinto Barresi, Dario Mazzanti, Darwin Caldwell, Andrea Brogni
- 4. Continuous Hand Openness Detection Using a Kinect-Like Device Vito Gentile, Salvatore Sorce, Antonio Gentile
- 5. Ontology-Based Visualisation of Cultural Heritage Rossana Damiano, Antonio Lieto, Vincenzo Lombardo

W-ADiS-S1: Autonomic Distributed Systems - Room 4

Chair: Florin Pop, University Politehnica of Bucharest, Romania

- 1. Context-Based Service for Intelligent Public Transportation Systems Valeriu-Daniel Stanciu, Ciprian Dobre, Valentin Cristea
- 2. Multi-objective Evolution Based Dynamic Job Scheduler in Grid Debjyoti Paul, Sanjeev K. Aggarwal
- 3. A Bio-Inspired Prediction Method for Water Quality in a Cyber-Infrastructure Architecture Florin Pop, Sorin Ciolofan, Catalin Negru, Mariana Mocanu, Valentin Cristea
- 4. Point of Contact Location and Normal Force Estimation Using Biomimetical Tactile Sensors Vlad Ciobanu, Decebal Popescu, Adrian Petrescu

15:00-15:15 Coffee Break

15:15-16:45 Parallel Sessions

CISIS-S13: Wireless Communication Systems - Room 1

Chair: Kazunori Uchida, Fukuoka Institute of Technology, Japan

- 1. Rapid Computation Algorithm for Radio Wave Propagation Characteristics on Airport Surface Junichi Honda, Takuya Otsuyama
- 2. A Discretization Criterion for Generating Random Rough Surface Based on Convolution Method Kazunori Uchida, Masafumi Takematsu, Junichi Honda
- 3. Resonator in Two Dimensional Photonic Crystal Structure with Square Lattice by Metallic Pillars Hiroshi Maeda, Kiyotoshi Yasumoto, Huili Chen, Daichi Ogata, Kazuya Tomiura
- 4. Evaluation of a Method for Finding Diffraction Points on Two Edges with Arbitrary Angle and Its Diffracted Fields

Jiro Iwashige, Leonard Barolli, Motohiko Iwaida, Saki Kameyama

W-SWISM-S2: Semantics and Dependability - Room 2

Chair: Beniamino Di Martino, Second University of Naples, Italy

- 1. A middleware for improving concurrency of long running transactions Flora Amato, Antonio d'Acierno, Vincenzo Moscato, Antonio Picariello, Antonino Mazzeo
- 2. Efficient Scalability through Layered Monitoring and Event Processing Konstantinos Kostantos, Dimosthenis Kyriazis, Marinos Themistocleous, Andreas Kapsalis
- 3. Supporting Development of Certified Aeronautical Components by Applying Text Analysis Techniques

G. Zazzaro, G. Gigante, E. Zaccariello, M. Ficco, B. Di Martino

4. Towards Real-Time Probabilistic Risk Assessment by Sensing Disruptive Events from Streamed News Feeds

Pete Burnap, Omer Rana, Nargis Pauran, Phil Bowen

5. Scheduling Decisions in Stream Processing on Heterogeneous Clusters Marek Rychly, Petr koda, Pavel Smr

W-VENOA-S1: Innovative and Multimedia Applications - Room 3

Chair: Hiroaki Nishino, Oita University, Japan

- 1. Development of Automatic Network Replication System for OpenFlow Network Nobukazu Iguchi, Hiroaki Tsutsumi, Kenzi Watanabe
- 2. iFarm: Development of Web-Based System of Cultivation and Cost Management for Agriculture Yukikazu Murakami
- 3. Development of Equipment for Experimental Studying of Networking Technologies for Junior and Senior High Schools

Kenzi Watanabe, Nobukazu Iguchi

- 4. Study on a Nursing System Using Information Communication Technology Eiji Aoki, Shunichi Yoshitake, Masaki Kubo
- 5. A 3D Editing Method with Hand Gesture Using Sound Information Tsuneo Kagawa, Maki Motomura, Hiroaki Nishino
- 6. A Mobile AR Assistant for Campus Area Network Management Hiroaki Nishino, Yutaka Nagatomo, Tsuneo Kagawa, Toshiyuki Haramaki

W-IEETeL-S1: Managing Emotions in Collaborative Learning Systems - Room 4

Chair: Minoru Nakayama, Tokyo Institute of Technology, Japan

- 1. A Note Taking Evaluation Index Using Term Networks in a Blended Learning Environment Minoru Nakayama, Kouichi Mutsuura, Hiroh Yamamoto
- 2. Open Group-Sourcing: A Social Learning Model Based on Peer Production and Feedback Laurent Moccozet, Camille Tardy
- 3. Looking for a Platform That Can Be Proposed to Students as a PLE Enabler Laurent Moccozet, Omar Benkacem, Herve Platteaux, Maud Foerster
- 4. Multimedia, Hypermedia, and Transmedia in Support of Learning Malinka Ivanova, Carmen Holotescu, Gabriela Grosseck

16:45-18:00 Single Session: CISIS - IMIS -2014 Keynote 3 Industrial Keynote Talk

Ms. Reka Balogh and Mr. Rob Porter: Software Defined Networks

20:00-22:00 Banquet Party

Friday, July 4, 2014

Organizing Committee Meeting and Discussions



IMIS-2014 Main Conference and Workshops Program

Thursday, July 2, 2014

08:00 Registration

09:00-10:00 Single Session: CISIS - IMIS-2014 Keynote 1

CISIS - IMIS-2014 Keynote Talk 1

Prof. Alfredo De Santis: New Frontiers in Anomaly Detection: Staying Tuned with Emerging Security Threats

10:30-11:00 Coffee Break

11:00-12:30 Parallel Sessions

IMIS-S1: Distributed System and Cloud Computing 1 - Room 5

Chair: Ilsun You, Korean Bible University, Korea

- 1. Thermal-Aware Task Placement with Dynamic Thermal Model in an Established Datacenter Zhigang Jiang, Wei Huang, Ilsun You, Zhuzhong Qian, Sanglu Lu
- 2. The GEO-Cloud Experiment: Global Earth Observation System Computed in Cloud Jonathan Becedas
- 3. Visions and Challenges for Sensor Network Collaboration in the Cloud Simon Oechsner, Boris Bellalta, Desislava Dimitrova, Tobias Hossfeld
- 4. Architecture Reconfiguration in Pervasive Environment: an AADL-based Approach Luxi Chen, Linpeng Huang, Chen Li, Mengyao Ruan

IMIS-S2: Intelligent Technologies and Applications on Big Data 1 - Room 6

Chair: Hae-Duck Joshua Jeong, Korean Bible University, Korea

- Construction of Scholarly n-Gram from Huge Text Data Myunggwon Hwang, Ha-Neul Yeom, Mi-Nyeong Hwang, Hanmin Jung
- 2. Research for the Pattern Analysis of Individual Interest Using SNS Data: Focusing on Facebook Dongjin Choi, Jeongin Kim, Eunji Lee, Chang Choi, Jiman Hong, Pankoo Kim
- 3. A New Method of Measuring Document Similarity for Movie Recommendation Sung-Min Kim, Young-Guk Ha
- 4. Large Imbalance Data Classification Based on MapReduce for Traffic Accident Prediction Seong-Hun Park, Young-Guk Ha

W-esIoT-S1: Networking, Security and IPv6 for the IoT - Room 7

Chair: Antonio Jara, University of Applied Science Western Switzerland (HESSO), Switzerland

- 1. Flexible, Direct Interactions between CoAP-Enabled IoT Devices Girum Ketema Teklemariam, Jeroen Hoebeke, Ingrid Moerman, Piet Demeester
- 2. Challenges of the Internet of Things: IPv6 and Network Management Nabil Benamar, Antonio Jara, Latif Ladid, Driss El Ouadghiri
- 3. Towards Privacy-Preserving Data Sharing in Smart Environments Jose L. Hernandez Ramos, Jorge Bernal Bernabe, Antonio F. Skarmeta
- 4. Extending Extensible Authentication Protocol over IEEE 802.15.4 Networks Marcin Piotr Pawlowski, Antonio J. Jara, Maciej J. Ogorzalek

W-PISPIS-S1: Practical Issues on Security in Public Internet Services - Room 8

Chair: Kangbin Yim, Soonchunhyang University, Korea

- 1. Anonymous Authentication Scheme Based on Proxy Group Signature for Wireless MESH Network Tianhan Gao, Qidi Miao, Nan Guo
- 2. Threats and Countermeasures on a 4G Mobile Network Seongmin Park, Sekwon Kim, Joohyung Oh, Myoungsun Noh, Chaetae Im
- 3. An Intuitive Computer Forensic Method by Timestamp Changing Patterns Gyusang Cho
- 4. Anti-theft Solusions for In-Vehicle Electronic Devices Kyungroul Lee, Hyungjun Yeuk, Jaein Kim, Kangbin Yim
- 5. Anonymous Credential-Based Privacy-Preserving Identity Verification for Business Processes Nan Guo, Yuanting Jin, Kangbin Yim

12:30-13:30 Lunch Break

13:30-15:00 Parallel Sessions

IMIS-S3: Distributed System and Cloud Computing 2 - Room 5

Chair: Xingjun Zhang, Xi'an Jiaotong University, China

- An Overview of Application Traffic Management Approaches: Challenges and Potential Extensions Ioanna Papafili, Krzysztof Wajda, Roman Lapacz, Alessandro Predieri, Thomas Bocek, Michael Seufert
- 2. Scenario-Based Behavioral Nonexistent Consistency Checking for Cyber-physical Systems Yan Zhang, Xiangwei Liu, Jin Shi, Tian Zhang, Zhuzhong Qian
- 3. Data De-duplication on Similar File Detection Yueguang Zhu, Xingjun Zhang, Runting Zhao, Xiaoshe Dong
- 4. An Enhanced Quantum PageRank Algorithm Integrated with Quantum Search Huiquan Wang, Junjie Wu, Xuejun Yang, Pingxing Chen, Xun Yi

IMIS-S4: Intelligent Technologies and Applications on Big Data 2 - Room 6

Chair: Hae-Duck Joshua Jeong, Korean Bible University, Korea

- 1. Conceptual Similarity Calculation Using Common-Context between Comparatives on Ontology Hyun Jung Lee, Mye Sohn
- 2. On Semantic Techniques for Intelligent Computing Myunggwon Hwang, Mi-Nyeong Hwang, Hanmin Jung
- 3. Fast Multi-line Detection and Tracking with CUDA for Vision-Based UAV Autopilot Tyan Vladimir, Doo-Hyun Kim, Young-Guk Ha, Dongwoon Jeon
- 4. Keyword-Based SPARQL Query Generation System to Improve Semantic Tractability on LOD Cloud Soyeon Im, Mye Sohn, Sunghwan Jeong, Hyun Jung Lee

W-esIoT-S2: Services, Augmented Reality and Crowdsensing for the IoT - Room 7

Chair: Antonio J. Jara, University of Applied Science Western Switzerland (HESSO), Switzerland

- 1. A System to Enable Level-of-Detail Mobile Interaction with Augmented Media Objects David Gomez, Ana M. Bernardos, Jose R. Casar
- Midgar: Domain-Specific Language to Generate Smart Objects for an Internet of Things Platform Cristian Gonzalez Garcia, Jordan Pascual Espada, Edward Rolando Nunez-Valdez, Vicente Garcia-Diaz
- 3. A Mobile Crowdsourcing Platform for Urban Infrastructure Maintenance Jose Pablo Gomez Barron, Miguel Angel Manso, Ramon Alcarria, Rufino Perez-Gomez
- 4. Extending the EPCIS with Building Automation Systems: A New Information System for the Internet of Things
 - Nam Ky Giang, Seonghoon Kim, Daeyoung Kim, Markus Jung, Wolfgang Kastner
- 5. Reusing Web-Enabled Actuators from a Semantic Space-Based Perspective Aitor Gomez-Goiri, Inigo Goiri, Diego Lopez-de-Ipina

W-MCNCS-S1: Privacy and Social Issues in the Public Internet Services - Room 8

Chair: Fang-Yie Leu, Tunghai University, Taiwan

- 1. High-Efficient Multi-key Exchange Protocol Based on Three-Party Authentication Kun-Lin Tsai, Yi-Li Huang, Fang-Yie Leu, Jiu-Soon Tan, Mengyuan Ye
- 2. Interoperability between Federated Authentication Systems Luigi Catuogno, Clemente Galdi

- 3. A Secure Authentication Scheme of Health Care Based on the Cloud Chin-Ling Chen, Tsai-Tung Yang, Fang-Yie Leu
- 4. A Multi-layer Secure Prevention Scheme for Improving E-Commerce Security Sen-Tarng Lai, Fang-Yie Leu, William Cheng-Chung Chu

15:00-15:15 Coffee Break

15:15-16:45 Parallel Sessions

IMIS-S5: Internet, Wireless and Mobile Networks for UPC 1 - Room 5

Chair: Nik Bessis, University of Derby, United Kindom

- A Dissemination Analysis in Mobile Wireless Ad Hoc Networks Using Probabilistic Broadcast D.G. Reina, S.L. Toral, Eleana Asimakopoulou, Nik Bessis, F. Barrero
- 2. A Cross-layer Design Scheme Based on Integrated Management Applied in Wireless Communication Linyuan Yao, Fei Song, Hongke Zhang
- 3. Cost-Effective Proxy-LMA Mobility Management Scheme in Mobile Networks with Global Mobility Support

Chulhee Cho, Jun-Dong Cho, Jongpil Jeong

4. Developing useful mobile applications in cross media platforms Cajsa-Tora Hermansson, Mikael Soderstrom, Dan Johansson

IMIS-S6: Disaster Resilient System and Reliable Network Technologies - Room 6

Chair: Yoshitaka Shibata, Iwate Prefectural University, Japan

- The Information Sharing System Using Web-GIS at the Time of Wide-Scale Disaster Tomoyuki Ishida, Kazuhiro Takahagi, Yoichiro Shimizu, Akira Sakuraba, Noriki Uchida, Yoshitaka Shibata
- 2. Mobile Gateway for Ubiquitous Health Care System Using ZigBee and Bluetooth Teemu H. Laine, Chaewoo Lee, Haejung Suk
- 3. Proposal of Autonomous Flight Wireless Nodes with Delay Tolerant Networks for Disaster Use Noriki Uchida, Noritaka Kawamura, Tomoyuki Ishida, Yoshitaka Shibata
- SODiCS on Challenged Communication Environment Kenta Ito, Go Hirakawa, Yoshitaka Shibata

W-esIoT-S3: Big Data and Software Engineering for the IoT - Room 7

Chair: Antonio J. Jara, University of Applied Science Western Switzerland (HESSO), Switzerland

- 1. Big Data for Cyber Physical Systems: An Analysis of Challenges, Solutions and Opportunities Antonio J. Jara, Dominique Genoud, Yann Bocchi
- Top-k Queries in Wireless Sensor Networks Leveraging Hierarchical Grid Index Jine Tang, Zhenhua Wang, Yunchuan Sun, Chu Du, Zhangbing Zhou
- Codesign-Oriented Platform for Agile Internet of Things Prototype Development Jonathan Ruiz-De-Garibay, Aitor Almeida, Szilard A. Kados, Adolfo Garcia-Corcuera, Diego Lopez-De-Ipina
- Exploiting the Internet of Things for Systems Engineering: Breaking Down the Barriers Between Siloed Engineering Teams Ian Giblett
- Smart City Data Stream Visualization Using Glyphs Felix Jesus Villanueva, Cesar Aguirre, David Villa, Maria Jose Santofimia, Juan Carlos Lopez

W-MCNCS-S2: SOP and Data Service/Detection - Room 8

Chair: Fang-Yie Leu, Tunghai University, Taiwan

- 1. Research on Comparison and Analysis of the DEFSOP, NIST Cell SOP, and ISO27037 SOP I-Long Lin, Yun-Sheng Yen, Fang-Yie Leu
- 2. An Efficient Protocol for Reliable Data Communication on Dataless Devices Arcangelo Castiglione, Raffaele Pizzolante, Bruno Carpentieri, Alfredo De Santis
- 3. Minimum Cost Content Object Reconstruction in Multi-tier Servers Lung-Pin Chen, Chih-Wei Hsieh, Fang-Yie Leu
- 4. Foreground Object Detection in Complex Scenes Using Cluster Color Chung-Chi Lin, Wen-Kai Tsai, Chishyan Liaw

19:30-21:30 Welcome Reception Party

Place: Copthorne Hotel in Birmingham

Address: Paradise Circus, Birmingham, West Midlands, B3 3HJ

Thursday, July 3, 2014

09:00-10:00 Single Session: CISIS - IMIS-2014 Keynote 2

CISIS - IMIS-2014 Keynote Talk 2

Dr. Horacio Gonzalez-Velez: Elastic Algorithmic Skeletons: Enhancing Structured Parallel Programming for Clouds and GPUs

10:00-10:30 Coffee Break

10:30-12:00 Parallel Sessions

IMIS-S7: Internet, Wireless and Mobile Networks for UPC 2 - Room 5

Chair: Kin Fun Li, University of Victoria, Canada

- 1. Seamless SPMIPv6-Based Handoff Scheme for Next-Generation Mobile Networks Chulhee Cho, Jun-Dong Cho, Jongpil Jeong
- 2. Analytical Modeling of IP-based Hierarchical Mobility Management Protocols Chulhee Cho, Jun-Dong Cho, Jongpil Jeong
- 3. A Case Study for Potential Carpooling in Beijing Fei Song, Rong Li, Huachun Zhou, Hongke Zhang, Ilsun You
- 4. An Exercise Data Logging System for Retrofitting Gym Equipment Colin Patch, Kin Fun Li, Bruce Gooch

IMIS-S8: Artificial Intelligence and Cognitive Technologies - Room 6

Chair: Marek R Ogiela, AGH Univ. of Science and Technology, Poland

- Unsupervised Learning of GDL Classifier Tomasz Hachaj, Marek R. Ogiela
- 2. Cognitive Management Systems Lidia Ogiela, Marek R. Ogiela
- 3. Facial Feature Extraction Using an Active Appearance Model on the iPhone Yong-Hwan Lee, Woori Han, Youngseop Kim, Bonam Kim
- Efficient Compression Algorithm for H.264/AVC Intra-prediction Using an Activity Map June Kim, Youngseop Kim, Yong-Hwan Lee, Oh-Jin Kwon, Bonam Kim
- 5. Feature Mining for Machine Learning Based Compilation Optimization Fengqian Li, Feilong Tang, Yao Shen

W-esIoT-S4: Applications for the IoT - Room 7

Chair: Antonio J. Jara, University of Applied Science Western Switzerland (HESSO), Switzerland

- 1. Chronic Patients Monitoring Using Wireless Sensors and Big Data Processing D. Gachet Paez, F. Aparicio, M. De Buenaga, Juan Ramon Ascanio
- 2. Team Up with Eco-Aware Everyday Things to Green Your Workplace! Diego Casado-Mansilla, Juan Lopez-De-Armentia, Pablo Garaizar, Diego Lopez-de-Ipina
- 3. Test Set Validation for Home Electrical Signal Disaggregation Luc Dufour, Dominique Genoud, Gianluca Rizzo, Antonio J. Jara, Pierre Roduit, Jean-Jacques Bezian, Bruno Ladevie

 ekoNET - Environmental Monitoring Using Low-Cost Sensors for Detecting Gases, Particulate Matter, and Meteorological Parameters Boris Pokric, Srdan Kreo, Dejan Drajic, Maja Pokric, Ivan Jokic, Milena Jovasevic-Stojanovic

W-WAIS-S1: Privacy and Security - Room 8

Chair: Hiroaki Kikuchi, Meiji University, Japan

- 1. Privacy-Preserving Technology for Secure Utilization of Sensor Data (Extended Abstract) Tetsuya Izu, Takao Ogura, Yumi Sakemi, Masahiko Takenaka, Hiroshi Tsuda
- 2. On the Vulnerability of Ghost Domain Names Hiroaki Kikuchi, Tomohiro Arimizu
- 3. Visualization of SSL Setting Status Such as the FQDN Mismatch Yuji Suga
- 4. New Privacy-Preserving Method for Matching Location Data Mebae Ushida, Yuji Yamaoka, Kouichi Itoh, Hiroshi Tsuda

12:00-13:30 Lunch Break

13:30-15:00 Parallel Sessions

IMIS-S9: Smart Phone and Mobile Computing Platform - Room 5

Chair: Ilsun You, Korean Bible University, Korea

- 1. Exploring the Design Space for Android Smartphones Shih-Hao Hung, Jen-Hao Chen, Chia-Heng Tu, Jeng-Peng Shieh, Roger Chien
- 2. Indoor Taxi-Cab: Real-Time Indoor Positioning and Location-Based Services with Ekahau and Android OS

Caner Kilinc, Seraj Al Mahmud Mostafa, Raihan UI Islam, Kashif Shahzad, Karl Andersson

- 3. PasDroid: Real-Time Security Enhancement for Android Shuen-Wen Hsiao, Shih-Hao Hung, Roger Chien, Chih-Wei Yeh
- 4. Efficient Identification of Windows Executable Programs to Prevent Software Piracy Yesol Kim, Jeongoh Moon, Seong-Je Cho, Minkyu Park, Sangchul Han

IMIS-S10: Security and Dependable Applications 1 - Room 6

Chair: Aniello Castiglione, University of Salerno, Italy

- 1. Adaptive Stealth Energy-Related DoS Attacks against Cloud Data Centers Francesco Palmieri, Massimo Ficco, Aniello Castiglione
- 2. How to Find an Appropriate K for K-Anonymization Shinsaku Kiyomoto, Yutaka Miyake
- 3. Elliptic Curve Scalar Multiplication with a Bijective Transform Yoshitaka Nagai, Masaaki Shirase, Tetsuya Izu
- 4. Identifying Windows Installer Package Files for Detection of Pirated Software Dongjin Kim, Yesol Kim, Jeongoh Moon, Seong-Je Cho, Jinwoon Woo, Ilsun You

W-ACTICS-S1: Next Generation Wireless Networks - Room 7

Chair: Bhed Bahadur Bista, Iwate Prefectural University, Japan

- 1. The Impact of TDMA Frame Size on Latency in a Neighbor-Aware VANET MAC Marthinus J. Booysen, Gert-Jan Van Rooyen
- 2. An Evaluation Environment and Methodology for Automotive Media Streaming Applications Robert Protzmann, Kay Massow, Ilja Radusch
- 3. Cooperative Power and Contention Control MAC Protocol in Multichannel Cognitive Radio Ad Hoc Networks

Chien-Min Wu, Hui-Kai Su, Maw-Lin Leou, Yi-Ching Liaw, Chih-Pin Lo

- 4. The Effect of TDMA Frame Size and the Hidden Node Problem on the Performance of a Neighbor-Aware VANET MAC Marthinus J. Booysen, Gert-Jan Van Rooyen
- Evaluation of Sleep Scheduling Method for Data Collection from Sensor Networks Divided into Local Areas Masato Nakamura, Shigetomo Kimura

W-ITAUC-S1: Network Coding and Security - Room 8

Chair: Hsing-Chung Chen, Asia University, Taiwan

1. A Credit-Based Incentive Protocol for Stimulating Network-Coded Cooperative Content Distribution in VANET

Ing-Chau Chang, Jacky Lo

- 2. NFC Attacks Analysis and Survey Cheng-Hao Chen, Iuon-Chang Lin, Chou-Chen Yang
- 3. QoS Based Performance Evaluation for the Cooperative Communication Systems in Decode-and-Forward Mode

Jyh-Horng Wen, Jheng-Sian Li, Cheng-Ying Yang, Yi-Shan Lin, Hsing-Chung Chen

15:00-15:15 Coffee Break

15:15-16:45 Parallel Sessions

IMIS-S11: Security and Dependable Applications 2 - Room 5

Chair: Mauro Migliardi, University of Padova, Italy

 A Survey of Green, Energy-Aware Security and Some of Its Recent Developments in Networking and Mobile Computing Mauro Michigardi, Alassia Marla, Luca Cavisliana

 $Mauro\ Migliardi,\ Alessio\ Merlo,\ Luca\ Caviglione$

- 2. On Security-Effective and Global Mobility Management for FPMIPv6 Networks Hyun-Suk Chai, Jun-Dong Cho, Jongpil Jeong
- 3. Cryptographic Techniques in Advanced Information Management Marek R. Ogiela, Lidia Ogiela, Urszula Ogiela
- 4. A Role-Based RSA Key Management Approach in a Hierarchy Scheme *Hsing-Chung Chen, Anita Christiana*

W-FINGNet-S1: Security Issues and New Applications - Room 6

Chair: Hae-Duck Joshua Jeong, Korean Bible University, Korea

- 1. Service Security for Smart Grid System Inshil Doh, Jiyoung Lim, Kijoon Chae
- 2. Security of Selected Future Internet Architectures: A Survey Rahamatullah Khondoker, Beny Nugraha, Ronald Marx, Kpatcha Bayarou
- 3. A Remote Lock System Using Bluetooth Communication Hae-Duck J. Jeong, Jiyoung Lim, Wooseok Hyun, Woojin Lee
- 4. Multi-defense Mechanism against DDoS in SDN Based CDNi Nishat-I-Mowla, Inshil Doh, Kijoon Chae

W-SMEUCE-S1: Ubiquitous Commerce Engineering and Information Management -Room 7

Chair: Mei Hua Liao, Asia University, Taiwan

- 1. A Comparative Study on the Performance of Electronic Reservation Services Mei Hua Huang, Zhao-Yu Liu, Perng-Fei Huang
- 2. Study of e-Business and Long-Established Companies in Japan *Hidekazu Sone, Innan Sasaki*
- 3. Media Coverage and Stock Return an Impulse Response Analysis Kuei-Yuan Wang, Chien-Kuo Chen, Hsiao-Chi Wei
- 4. Analysts' Forecasts and Institutional Investors' Behavior Mei-hua Liao, Chia-Yun Chang
- 5. How Does the Ratio and Part-Time Situation of Independent Directors Affect Firm Performance? Ying-Li Lin, Hsiu-Feng Huang, Shu-Chen Chen

W-ITAUC-S2: Mobile and Wireless Networks - Room 8

Chair: Hsing-Chung Chen, Asia University, Taiwan

- 1. Energy Efficiency of Bandwidth Expansion Algorithms in Wireless Communication Systems Yung-Fa Huang, Chuan-Bi Lin, Chia-Chi Chang, Che-Hao Li, Ching-Mu Chen
- 2. An improving localization scheme using mobile anchors with directional antennas in wireless sensor networks

Young-Long Chen, Tzu-Chieh Sun, Neng-Chung Wang, Shin-You Shie

- 3. A Dual-Path-Based Data Aggregation Scheme for Grid-Based Wireless Sensor Networks Neng-Chung Wang, Yung-Kuei Chiang, Young-Long Chen, Chih-Hung Hsieh
- Towards Implementing Web-based Adaptive Application Mobility using Web Real-Time Communications
 Den Johansson Milagel Holmsonn

Dan Johansson, Mikael Holmgren

16:45-18:00 Single Session: CISIS - IMIS -2014 Keynote 3

Industrial Keynote Talk

Ms. Reka Balogh and Mr. Rob Porter: Software Defined Networks 20:00-22:00 Banquet Party

Friday, July 4, 2014

Organizing Committee Meeting and Discussion