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# PROGRAM GUIDE

## IEEE INCOS-2011

*The Third IEEE International Conference on  
Intelligent Networking and Collaborative Systems*



**November 30th - December 2nd, 2011**

**Fukuoka Institute of Technology (FIT)**

**Fukuoka, JAPAN**

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## **IEEE INCOS-2011 Conference Organizing Committee**

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*Fatos Xhafa, Technical University of Catalonia, Spain*

*Ajith Abraham, Machine Intelligence Research Labs (MIR Labs), USA*

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*Leonard Barolli, FIT, Japan*

*Mario Köppen, KIT, Japan*

*Ajith Abraham, MIR Labs, USA*

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*Nicola Bui, Patavina Technologies, Italy*

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*Fernando Pianegiani, University of Trento, Italy*

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*Eric Bruillard, STEF - Ecole Normale Supérieure de Cachan (ENS Cachan), France*

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*Hicham Elzabadani, American University in Dubai, Dubai*

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*Mohammad Samaka, Qatar University, Qatar*

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*Nasser Nassiri, HCT, UAE*

*Min Wu, Oracle, USA*

#### **6. Intelligent Collaborative Systems for Work and Learning, Virtual Organizations and Campuses**

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*Styliani Kleanthous, University of Leeds, UK*

*Mihaela Cocea, University of Portsmouth, UK*

*Pawel Myszkowski, Wroclaw University of Technology, Poland*

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*Agoritsa Gogoulou, University of Athens, Greece*  
*Evangelia Gouli, University of the Aegean, Greece*

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*Thuy-Linh Nguyen, Australian Catholic University, Australia (Chair)*  
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*Martin Gaedke, University of Karlsruhe, Germany*  
*Karl Lieberherr, Northeastern University Boston, USA*  
*Somkiat Kitjongthawonkul, Australian Catholic University, Australia*

## **8. Data Mining and Knowledge Management for Intelligent Networking and Collaborative Systems**

*Marenglen Biba, Department of Computer Science, University of New York Tirana, Albania (Chair)*  
*Donato Malerba, University of Bari, Italy*  
*Janusz Wojtusiak, George Mason University, USA*  
*Francesco Masullil, University of Genova, Italy*  
*Stefano Ferilli, University of Bari, Italy*  
*Alfredo Cuzzocrea, ICAR-CNR and University of Calabria, Italy*  
*Keivan KianMehr, University of Western Ontario, Canada*  
*Piero Leo, IBM Italy, Italy*  
*Henryk Rybinski, Warsaw University of Technology, Poland*  
*Djamel Zighed, Universite Lumiere Lyon 2, France*

## **9. Intelligent Networking for Social Networks**

*Hamamache Kheddouci, Universite Claude Bernard Lyon 1, France (Chair)*  
*Reda Alhadj, University of Calgary, Canada*  
*Dan Braha, University of Massachusetts, USA*  
*Massimo Marchiori, W3C-MIT, USA*



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## 10. Security, Organization, Management and Autonomic Computing for Intelligent Networking and Collaborative Systems

*Xiaofeng Chen, Xidian University, China (Chair)*

*Hui Li, Xidian University, China*

*Xinyi Huang, Institute for Infocomm Research, Singapore*

*Willy Susilo, University of Wollongong, Australia*

*Qianhong Wu, Universitat Rovira i Virgili, Spain*

*Fangguo Zhang, Sun Yat-Sen Univeristy, China*

*Jin Li, Guangzhou University, China*

*Ashley Chonka, Deakin University/INRIA, Australia*

*Bo Qin, Universitat Rovira i Vergili, Spain*

*Lei Zhang, East China Normal University, China*

*Xinghua Li, Xidian University, China*

*Yulong Shen, Xidian University, China*

*Qiang Tang, University of Twente, Netherlands*

*Joonsang Baek, Khalifa University of Science, Technology and Research (KUSTAR), UAE*

*Jian Weng, Jinan University, China*

*Qiong Huang, City University of Hong Kong, China*

*Shengli Liu, Shanghai Jiao Tong University, China*

## 11. Poster Papers Track

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*Kaori Yoshida, KIT, Japan*

*Yoshiaki Hori, Kyushu University, Japan*

*Manabu Kato, Ariake National College of Technology, Japan*

*Hiroyuki Koga, The University of Kitakyushu, Japan*

*Hideaki Iiduka, KIT, Japan*



\*\* Best papers awards are supported by The International Fuzzy Systems Association (IFSA).

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## Welcome Message from IEEE INCoS-2011 Chairs

Welcome to the 3d IEEE International Conference on Intelligent Networking and Collaborative Systems (IEEE INCOS-2011) held on 30th November – 2nd December, 2011 at Fukuoka Institute of Technology, Fukuoka, Japan. The conference is technically co-sponsored by IEEE Systems, Man & Cybernetics (IEEE SMC Society), Kyushu Institute of Technology, Japan, Fukuoka Institute of Technology (FIT), Japan and Technical University of Catalonia, Spain.

IEEE INCOS is a multidisciplinary conference that covers latest advances in intelligent social networks and 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 and relations. Web 2.0 has come to play a major role in this context by enabling a new generation of social networks and web-based communities and dramatically changing the way we use and interact with the Web. Social network analysis is also a rapidly growing field to investigate the dynamics and structure of intelligent Web-based networking and collaborative systems.

Virtual campuses 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. 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. Virtual communities of practice also provide poorly interactive solutions and lack of full support for organization, management, mobility and security, which have become major research issues in networked collaborative systems.

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. IEEE INCOS addresses a large number of themes and focuses on the following research tracks:

- Methodology, Analysis & Sustainability of Intelligent Networking and Collaborative Systems
- Grid And P2P Distributed Infrastructure for Intelligent Networking and Collaborative Systems
- Wireless and Sensor Systems for Intelligent Networking and Collaborative Systems
- Networking and Collaboration at Schools
- Intelligent Networking for Virtual Organizations and Campuses
- Intelligent Networking for Social Networks
- Intelligent Collaborative Systems for Work and Learning
- Data Mining and Knowledge Management for Intelligent Networking and Collaborative Systems
- Collaborative Healthcare Systems: Issues, Solutions and Trends

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- Software Engineering for Intelligent Networking And Collaborative Systems
  - Security, Organization, Management and Autonomic Computing for Intelligent Networking and Collaborative Systems.

The conference program committee had a very challenging task of choosing high quality submissions from a total of 180 submissions received. After a peer review process in which each paper was reviewed by at least two referees (in average three reviews per submission), there were accepted 48 regular papers, 95 workshop papers and 11 posters.

This edition of IEEE INCOS was honoured to have the presence of the following plenary speakers.

*Prof. Timothy K. Shih, National Central University, Taiwan*

*Prof. Prof. Yuji Oie, Vice President, Kyushu Institute of Technology, Japan*

Many people have collaborated and worked hard to produce a successful IEEE INCOS 2011 conference. First and foremost, we would like to thank all the authors for their continuing support to the conference by submitting their research work to the conference, for their presentations and discussions during the conference. We thank Program Committee members and external reviewers, who carried out the most difficult work by carefully evaluating the submissions and providing constructive feedback. We would like to thank the track chairs for their work on promoting the conference and their tracks. We appreciate Workshops Co-Chairs Dr Santi Caballé and Dr Kaori Yoshida for the successful organization of the 6 workshops within the conference. We would like to give special thanks to the members of the local organizing committee. We are very grateful to IEEE SMC as well as several academic institutions for their technical sponsorship and assistance.

We would like to thank Fukuoka Institute of Technology (FIT) for giving us the possibility to organize the conference in its beautiful Campus and new FIT Hall, and Fukuoka City and Fukuoka Convention Bureau for their kind support and help.

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

We look forward to seeing you again in forthcoming edition of IEEE INCoS conference!

#### **General Chairs**

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

Fatos Xhafa, Technical University of Catalonia (UPC), Spain

Ajith Abraham, Machine Intelligence Research Labs (MIR Labs), USA

#### **Programme Committee Chairs**

Janusz Kacprzyk, Polish Academy of Sciences, Poland

Mario Köppen, Kyushu Institute of Technology (KIT), Japan

*Fukuoka, Japan*

*September 2011*

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## Welcome Message from IEEE INCoS-2011 Workshops Co-Chairs

Welcome to the Workshops of the 3d IEEE International Conference on Intelligent Networking and Collaborative Systems (IEEE INCOS-2011) held 30th November – 2nd December, 2011 at Fukuoka Institute of Technology, Fukuoka, Japan. The conference is technically co-sponsored by IEEE Systems, Man & Cybernetics (IEEE SMC Society), Fukuoka Institute of Technology (FIT), Japan, Kyushu Institute of Technology (KIT), Japan, and Technical University of Catalonia, Spain.

In this edition of the conference, there were held one International Symposium and five workshops, which complemented the INCOS main themes with specific themes and research issues and challenges. These included:

- 13th MNSA-2011: The 13th International Symposium on Multimedia Network Systems and Applications
- 4th WIND-2011: 4th International Workshop on Information Network Design
- 3rd MIST-2011: 3rd International Workshop on Managing Insider Security Threats
- 2nd CIDM-2011: 2nd International Workshop on Computational Intelligence for Disaster Management
- 1st ALICE-2011: 1st International Workshop on Adaptive Learning via Interactive, Collaborative and Emotional Approaches
- 1st WKED-2011: 1st International Workshop on Kansei Engineering and Design

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 IEEE INCoS-2011 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 have great time in Fukuoka, Japan!

**IEEE INCoS-2011 Workshops Co-Chairs**

Santi Caballé, Open University of Catalonia, Spain

Kaori Yoshida, Kyushu Institute of Technology, Japan

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## **Welcome Message from MNSA-2011 International Symposium Co-Chairs**

It is our great pleasure to welcome you to the 13-th International Symposium on Multimedia Network Systems and Applications (MNSA-2011), which will be held in conjunction with the 3-rd IEEE International Conference on Intelligent Networking and Collaborative Systems (IEEE INCoS-2011) in Fukuoka Institute of Technology, Fukuoka, Japan, from November 30 to December 2, 2011.

MNSA started in 1999 as an International Workshop and has been held successfully for 12 years in many countries such as USA, Germany, Austria, Japan, Canada, China and Italy. This international symposium is a forum for sharing ideas and research work in the emerging areas of multimedia networking and systems.

Networks of today are going through a rapid evolution and the growing popularity of wired and wireless networks, multimedia network systems and applications are changing our daily life. In the last few years, we have observed an explosive growth of multimedia computing, communication and applications. This revolution is transforming the way people lives, works and interacts with each other, and is impacting the way business, education, entertainment, and health care are operating. Presently, a lot of research on high-speed networks and multimedia communication is going on. The papers included in this symposium cover aspects of P2P systems, multimedia applications, distributed computing systems and wireless networks.

For the MNSA-2011, we received very high quality submissions and we accepted 41 papers, which will be presented in 13 sessions. Many people contributed to the success of MNSA-2011. First, we would like to thank the organizing committee of IEEE INCoS-2011 International Conference for giving us the opportunity to organize MNSA-2011. We would like to thank all authors for submitting their research work and for their participation.

We are looking forward to meet them again in the forthcoming editions of the workshop. We would like to express our appreciation to MNSA-2011 reviewers who carefully evaluated the submitted papers. Finally, we would like to thank the Local Arrangement Chairs for the local arrangement of the workshop.

We hope you will enjoy the workshop and have a great time in Fukuoka.

### **MNSA-2011 International Symposium Organizers**

Makoto Takizawa, Seikei University, Japan  
Leonard Barolli, Fukuoka Institute of Technology, Japan  
Timothy Shih, National Central University, Taiwan  
Yoshitaka Shibata, Iwate Prefectural University, Japan

### **MNSA-2011 International Symposium General Co-Chairs**

Minoru Uehara, Toyo University, Japan  
Markus Alekxy, ABB AG Corporate Research Centre, Germany

### **MNSA-2011 International Symposium Program Co-Chairs**

Hui-Huang Hsu, Tamkang University, Taiwan  
Tomoya Enokido, Risho University, Japan

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## Welcome Message from WIND-2011 International Workshop Co-Chairs

Nowadays the Internet is playing a role of social and economical infrastructure and is expected to support not only comfortable communication and information dissemination but also any kind of intelligent and collaborative activities in a dependable manner. However, the explosive growth of its usage with diversifying the communication technologies and the service applications makes it difficult to manage efficient sharing of the Internet. In addition, an inconsistency between Internet technologies and the human society forces a complex and unpredictable tension among end-users, applications, and ISPs (Internet Service Providers). It is thought, therefore, that the Internet is approaching a turning point and there might be the need for rethinking and redesigning the entire system composed of the human society, nature, and the Internet. To solve the problems across multiple layers on a large-scale and complex system and to design the entire system of systems towards future information networks for human/social orchestration, a new tide of multi-perspective and multi-disciplinary research is essential. It will involve not only the network engineering (network routing, mobile and wireless networks, network measurement and management, high-speed networks, etc.) and the networked applications (robotics, distributed computing, human computer interactions, Kansei information processing, etc.), but the network science (providing new tools to understand and control the huge-scale complex systems based on theories, e.g., graph theory, game theory, information theory, learning theory, statistical physics, etc.) and the social science (enabling safe, secure, and human-centric application principles and business-models).

The Information Network Design Workshop aims at exploring ongoing efforts in the theory and application on a wide variety of research fields related to the design of information networks and resource sharing in the networks. The workshop provides an opportunity for academic/industry researchers and professionals to share, exchange, and review recent advances on information network design research. Original contribution describing recent modeling, analysis, and experiment on network design research with particular, but not exclusive, regard to:

- Large scale and/or Complex networks
- Cross layered networks
- Overlay and/or P2P networks
- Sensor and/or Mobile ad-hoc networks
- Delay/disruption tolerant networks
- Social networks
- Applications on networks
- Fundamental theories for network design

The workshop will present 9 papers, covering newest and quality research contributions to the engineering discipline of network design, control, management and maintenance. The workshop organizers would like to thank all authors who have contributed to the success of this workshop. Also thanks go to the members of the International Program Committee, whose efforts were most helpful to ensure highest quality of paper selection: Leonard Barolli, Fatos Xhafa, Masato Uchida, Hideaki Iiduka, Kenji Kawahara, Hiroshi Koide, Takeshi Ikenaga, Yutaka Nakamura, Kei Ohnishi, Kenichi Kourai, Yutaka Fukuda, and Kazuya Tsukamoto. Then we have to

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thank all the organizers of IEEE INCoS 2011 conference, for welcoming this workshop and whose help and assistance was always highly appreciated, especially for the continuous efforts of Leonard Barolli, Fatos Xhafa, and Santi Caballe.

We wish all participants and contributors to spend an event with high research impact, interesting discussions, exchange of research ideas, and paving the future research cooperation.

**WIND-2011 International Workshop Organizers**

Masaki Aida (Tokyo Metropolitan University, Japan)

Akira Arutaki (Kyushu Institute of Technology, Japan)

Mario Koeppen (Kyushu Institute of Technology, Japan)

Hiroyoshi Miwa (Kwansei Gakuin University, Japan)

Gunther Raidl (Vienna University of Technology, Austria)

Masato Tsuru (Kyushu Institute of Technology, Japan)

Kaori Yoshida (Kyushu Institute of Technology, Japan)

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## **Welcome Message from MIST-2011 International Workshop Co-Chairs**

Welcome to the 3rd International Workshop on International Workshop on Managing Insider Security Threats (MIST-2011), which will be held in conjunction with the 3-rd IEEE International Conference on Intelligent Networking and Collaborative Systems (IEEE INCoS-2011) in Fukuoka Institute of Technology, Fukuoka, Japan, from November 30 to December 2, 2011.

During the past decades, information security developments have been mainly concerned with preventing illegal attacks by outsiders, such as hacking, virus propagation, and spyware. However, nowadays information leakage caused by insiders who are legally authorized to have access to some corporate information is increasing dramatically. These leakages can cause significant damages such as weakening the competitiveness of companies (and even countries). Information leakage caused by insiders occurs less frequently than information leakage caused by outsiders, but the financial damage is much greater. Countermeasures in terms of physical, managerial, and technical aspects are necessary to construct an integral security management system to protect companies' major information assets from unauthorized internal attackers. MIST-2011 aims to showcase the most recent challenges and advances in security technologies and management systems to prevent leakage of organizations' information caused by insiders. It may also include state-of-the-art surveys and case analyses of practical significance.

We expect that the workshop will be a trigger for further research and technology improvement related to this important subject. This year total 18 high qualified papers will be presented in the five sessions of MIST-2011. Also, Prof. Dieter Gollmann (Hamburg University of Technology, Germany) will deliver a keynote speech titled "From Insider Threats to Business Processes that are Secure-by-Design", and Dr. Shinsaku Kiyomoto (KDDI R&D Lab., Japan) will deliver an invited industrial talk titled "On Data Importance Analysis".

It is impossible to organize such a successful program without the help of many individuals. We would like to express our special thanks to the authors of the submitted papers, and to the program committee members, who provided timely and significant reviews. In addition, we would like to thank Prof. Kouichi Sakurai and Dr. Yoshiaki Hori (Sakurai Laboratory at Kyushu University, Japan) for their financial support to our workshop. Finally, we would like to thank General Chairs of IEEE INCoS-2011, Prof. Leonard Barolli (Fukuoka Institute of Technology, Japan), Dr. Fatos Xhafa (Technical University of Catalonia, Spain), and Dr. Ajith Abraham (Machine Intelligence Research Labs (MIR Labs), USA) for their countless support.

We hope all of you enjoy MIST-2011 and find this a productive opportunity to exchange ideas with many researchers.

### **MIST-2011 International Workshop Organizers**

Ilsun You, Korean Bible University, South Korea

Christian W. Probst, Technical University of Denmark, Denmark

Yoshiaki Hori, Kyushu University, Japan

### **MIST-2011 International Workshop Advisory Committee**

Kouichi Sakurai, Kyushu University, Japan



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## **Welcome Message from CIDM-2011 International Workshop Organizers**

It is our great pleasure to welcome you to the 2nd International Workshop on Computational Intelligence for Disaster Management (CIDM-2011), which will be held in conjunction with the 3-rd IEEE International Conference on Intelligent Networking and Collaborative Systems (IEEE INCoS-2011) in Fukuoka Institute of Technology, Fukuoka, Japan, from November 30 to December 2, 2011.

The 2nd International Workshop on Computational Intelligence for Disaster Management (CIDM-2011) is dedicated to the dissemination of completed or work in progress original contributions that are related to the theories, practices and concepts of emerging computational and collaborative technologies for the purpose of managing disasters. Various advanced and emerging computational paradigms could be applied as a means to mitigate and prepare for, respond to and recover from growing occurrences of natural and man-made disasters. Stakeholders in disaster management settings often find the effective and efficient utilisation of emerging technologies quite a challenging process but very frequently a critical computational inclusion to the intelligence that it is required in the decision-making for protecting lives, organizations, property, environment and technical infrastructures. CIDM-2011 aims to prompt relevant discussion and highlight issues related to the stakeholders' needs and the available technologies, which could be applied to support the operation and functioning during the aforementioned disaster stages. Thus, advances of applicable technologies including smart spaces and sensors, context-aware, situated and pervasive computing, geographical information systems, ad-hoc mobile networks, wireless communications, grid and cloud computing, social networks, Web 2.0 and crowd sourcing are discussed. Specifically, the scope of CIDM-2011 is to demonstrate the increased applicability and impact of computational intelligence in satisfying the disaster's management domain challenging requirements.

For the CIDM-2011, we received very high quality submissions and we accepted 10 papers, which will be presented in 3 sessions. Many people contributed to the success of CIDM-2011. First, we would like to thank the organizing committee of IEEE INCoS-2011 International Conference for giving us the opportunity to organize CIDM-2011. We would like to thank all the authors of the workshop for submitting their research works and for their participation. We are looking forward to meet them again in the forthcoming editions of the workshop. We would like to express our appreciation to CIDM-2011 reviewers who carefully evaluated the submitted papers. Finally, we would like to thank the Local Arrangement Chairs for the local arrangement of the workshop.

We hope you will enjoy the workshop and have a great time in Fukuoka.

### **CIDM-2011 International Workshop Co-Chairs**

Eleana Asimakopoulou, University of Bedfordshire, UK

Nik Bessis, University of Derby, UK

Fatos Xhafa, Technical University of Catalonia, Spain

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## Welcome Message from ALICE-2011 Workshop Chairs

It is our great pleasure to welcome you to the International Workshop on Adaptive Learning via Interactive, Collaborative and Emotional approaches (ALICE-2011), which will be held in conjunction with the 3rd IEEE International Conference on Intelligent Networking and Collaborative Systems (IEEE INCoS-2011) in Fukuoka Institute of Technology, Fukuoka, Japan, from November 30 to December 2, 2011.

The international workshop ALICE-2011 aims at providing a forum for innovative adaptive e-learning combining personalization, collaboration and simulation aspects within an affective/emotional based approach able to contribute to the overcoming of the quoted limitations of current e-learning systems and content. Special emphasis is given to environments that are interactive, challenging and context aware while enabling learners' demand of empowerment, social identity, and authentic learning experience.

Over the last decade, despite a great potential and some initial successes, e-learning systems do not yet have the impact that many believe is possible. Moreover, the gap seems to be increasing because of the greater expectations of the current generation (Digital Natives) who have grown up with modern technology. There are also more general problems. In particular, an over-emphasis on cost effectiveness has meant that content is often not as strong as it needs to be and this deficiency has contributed to a lack of user engagement and some high attrition rates. We accepted 12 high quality submissions in ALICE-2011 workshop, which addressed these issues and have consistently highlighted the important relationship between engagement and learning, with students who are highly motivated being more likely to engage in the learning process.

ALICE-2011 international workshop is fully supported by the EU Project ALICE (<http://www.aliceproject.eu/>). Many people inside and outside the ALICE project contributed to the success of the first edition of this workshop. First, we would like to thank the organizing committee of IEEE INCoS-2011 International Conference for giving us the opportunity to organize ALICE-2011 as well as the Local Arrangement Chairs for the local arrangement of the workshop. We would like to thank all the authors of the workshop for submitting their research works and for their participation. We are looking forward to meeting them again in the forthcoming editions of the workshop.

We would like to express our appreciation to ALICE-2011 reviewers who carefully evaluated the submitted papers. We would also like to express our gratitude to Prof. Naomi Miyake for her great support to our workshop. Finally, we would like to thank the Editor-in-Chief of the Journal of Computer Assisted Learning for the consideration of publishing an extension of the best papers of the workshop in this prestigious journal.

We hope you will enjoy the workshop and have a great time in Fukuoka.

### **ALICE-2011 Workshop Chairs**

Santi Caballé, Open University of Catalonia, Barcelona, Spain

Nicola Capuano, University of Salerno, Italy

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## **Welcome Message from WKED-2011 International Workshop Organizers**

It is our great pleasure to welcome you to the 1st International Workshop on Kansei Engineering and Design (WKED-2011), which will be held in conjunction with the 3rd IEEE International Conference on Intelligent Networking and Collaborative Systems (IEEE INCoS-2011) in Fukuoka Institute of Technology, Fukuoka, Japan, from November 30 to December 2, 2011.

Kansei Engineering and Design research has been expected to assist progress of societies with various research fields such as engineering, economics, and psychology. The Workshop on Kansei Engineering and Design aims at exploring ongoing efforts in the theory, design and application on a wide variety of research fields related to Kansei Engineering. The workshop provides an opportunity for academic/industry researchers and professionals to share, exchange, and review recent advances on Kansei Engineering research. Original contribution describing recent modeling, analysis, and experiment on Kansei Engineering and Design with particular, but not exclusive, regard to:

- Kansei Theory - Interaction Design
- Kansei Information - Experience Design
- Kansei Engineering - Fashion Design
- Kansei Robotics - Computing Design Cognition
- Kansei Education - Business
- Kansei and Music - Management
- Kansei Measurement - Brand Identity
- Emotion Measurement - Designing Pleasure
- Emotional Design - Culture and Design
- Psychology of Emotions

For the WKED-2011, we received very high originality submissions and we accepted 5 papers. We would like to thank all the authors of the workshop for submitting their research works. Also we would like to express our appreciation to WKED-2011 reviewers who carefully evaluated the submitted papers. We hope all contributors and participants will enjoy the workshop with research discussions, inspiration of new idea, meeting people, and have a great time in Fukuoka, Japan.

### **WKED-2011 International Workshop Organizing Committee**

Hisao Shiizuka, Kogakuin University, President of JSKE, Japan

Kaori Yoshida, Kyushu Institute of Technology, Japan

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## IEEE INCOS-2011 Keynote I

**Prof. Timothy K. Shih**

Multimedia Information Network Lab, National Central University, Taiwan

**E-mail:** TimothyKShih@gmail.com

### **Video Forgery and Motion Editing**

**Abstract:**

Video Forgery is a technique for generating fake video by altering, combining, or creating new video contents. We change the behavior of actors in a video. For instance, the outcome of a 100-meter race in the Olympic Game can be falsified. We track objects and segment motions using a modified mean shift mechanism. The resulting video layers can be played in different speeds and at different reference points with respect to the original video. In order to obtain a smooth movement of target objects, a motion interpolation mechanism is proposed based on reference stick figures (i.e., a structure of human skeleton) and video inpainting mechanism. The video inpainting mechanism is performed in a quasi-3D space via guided 3D patch matching. Interpolated target objects and background layers are fused. It is hard to tell whether a falsified video is the original.

In addition, in this talk, we demonstrate a new technique to allow users to change the dynamic texture used in a video background for special effect production. For instance, the dynamic texture of fire, smoke, water, cloud, and others can be edited through a series of automatic algorithms. Motion estimations of global and local textures are used. Video blending techniques are used in conjunction with a color balancing technique. The editing procedure will search for suitable patches in irregular shape blocks, to reproduce a realistic dynamic background, such as large waterfall, fire scene, or smoky background. The technique is suitable for making science fiction movies.

We demonstrate the original and the falsified videos in our website at <http://www.csie.ncu.edu.tw/~tshih>. Although video falsifying may create a moral problem, our intension is to create special effects in movie industry.

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## IEEE INCOS-2011 Keynote II

**Prof. Yuji Oie**

Vice President, Kyushu Institute of Technology, Japan

**E-mail:** [oiie@cse.kyutech.ac.jp](mailto:oiie@cse.kyutech.ac.jp)

### **Networks with Diversity and Their Technologies**

**Abstract:**

The network plays a vital role in our society and is expected to evolve to meet the changing demands and constraints. The demands for the use of networks are diverse so that they are used by diverse applications and in diverse environments. In particular, the number of mobile users of the networks significantly increases, so that much more wireless frequency will be needed in near future. The wireless frequencies are diverse, in nature, in terms of their transmission capacity and coverage.

Almost all of them are already assigned to specific use and are not available except for predetermined use, while their utilization varies in time and can be sometime quite limited. In addition, mobile users can be in diverse environment: sometimes in challenged environment which can be featured by huge communication error or/and intermittent links. In this talk, I will focus on two networks: Dynamic Spectrum Access Network (DSAN) and Delay, Disruption, Disconnection Tolerant Network (DTN). The DSAN enables effective use of diverse frequency, while the assigned frequency is not always used efficiently yet.

We have conducted vehicle communications field tests in Japan using TV white space and I will show a video about the field tests. The DTN enables communication in challenged environments. Furthermore, performance metric used for network design becomes diverse; e.g., energy saving is now regarded as important one, which leads to green networking. Network topologies are also diverse; e.g., nodes are not always uniform, but some of them are linked with a great number of nodes, while others are not. These features and networking technologies will be addressed as well.

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## ALICE-2011 Keynote Talk

**Prof. Naomi Miyake**

CoREF, University of Tokyo, Tokyo, Japan

**E-mail:** [nmiyake@p.u-tokyo.ac.jp](mailto:nmiyake@p.u-tokyo.ac.jp)

### **Knowledge Constructive Jigsaw as an Adaptive Learning Framework: Its Design Principles and Network Supports**

**Abstract:**

I will report our current endeavor to create a learning community aiming for better quality education, by changing classroom practices from teacher-centric to learnercentric. Our efforts are focused on creating intellectually challenging collaborative learning based on a framework called “constructive interaction”, which has been identified as a basic skill of human beings to learn from social interaction. The design is called the “Knowledge Constructive Jigsaw”, which encourages the learners engage in actively explaining what each learner knows to integrate them and create an answer to the shared problem. In this presentation, I will explain the basic framework and how it can be implemented in regular classroom activities, with some outcomes. I will then touch upon how this renovation effort opens new research fields, including the formation of a networked, sustainable learning community.

\*This keynote talk has been supported by the European Commission under the Collaborative Project ALICE (FP7-ICT-2009.4.2-257639)

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## MIST-2011 Keynote Talk

**Prof. Dieter Gollman**

Hamburg University of Technology, Germany

**E-mail:** [diego@tu-harburg.de](mailto:diego@tu-harburg.de)

### **From Insider Threats to Business Processes that are Secure-by-Design**

**Abstract:**

The observations that security is not an add-on feature and that insiders pose a considerable security threat have both been familiar in the security community for a long time. Attempts to deal with insider threats are not new either. Relevant techniques such as separation of duties are part of the standard toolset of security practitioners. However, it may well be true that in the past most countermeasures against insider threats belonged to the social and not to the technical domain. With increasing automation and IT support for business processes this approach is reaching its limits, as are approaches that just add-on IT security to business processes. This talk will argue that defending against insider threats is in fact just one aspect of designing secure organisational (business) processes, and that one has to start at the design of the processes within an organization to make progress in dealing with insider threat.

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# IEEE INCOS-2011

*The Third IEEE International Conference on  
Intelligent Networking and Collaborative Systems*

## **IEEE INCOS-2011 Main Conference & Workshops Program**

**Wednesday, November 30, 2011**

**08:00 – 09:00 Registration**

**09:00 – 10:30 Single Session: Opening & Keynote Talk**

**IEEE INCOS-2011 Keynote Talk I:**

Video Forgery and Motion Editing

**Prof. Timothy K. Shih**, *National Central University, Taiwan*

**10:30 – 11:00 Coffee Break**

**11:00 – 12:30 Parallel Sessions**

**INCOS-S1: Optimization and Fairness – Room 1**

**Chair: Hiroyoshi Miwa**, *Kwansei Gakuin University, Japan*

1. Optimal Forwarding Criterion of Utility-based Routing Under Sequential Encounters for Delay Tolerant Networks

*Akihiro Fujihara, Shiro Ono, Hiroyoshi Miwa*

2. Proposal of an Evolutional Architecture for Metabolic Computing

*Minoru Uehara*

3. Fairness with Semi-rational Players in Standard Communication Networks

*Yilei Wang, Qiuliang Xu*

4. Diffusion in Social Networks and Market Stability

*Nikos Salamanos, Dimitris Konstantopoulos*

**INCOS-S2: Evolutionary Computation and Meta-heuristics – Room 2**

**Chair: Mario Koeppen**, *Kyushu Institute of Technology, Japan*

1. Comparative Evaluations of Evolutionary Computation with Elite Obtained in Reduced Dimensional Spaces

*Yan Pei, Hideyuki Takagi*

2. Genetically Evolved Fuzzy Predictor for Photovoltaic Power Output Estimation

*Pavel Kromer, Vaclav Snasel, Jan Platos, Ajith Abraham, Lukas Prokop, Stanislav Misak*



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3. Unsorting the Proportional Fairness Relation

*Mario Koeppe, Kaori Yoshida, Masato Tsuru*

4. Effects of Mutation and Crossover in Genetic Algorithms for Node Placement in WMNs Considering Number of Covered Users Parameter

*Tetsuya Oda, Admir Barolli, Evjola Spaho, Fatos Xhafa, Leonard Barolli*

### **W-CIDM-S1: Approaches and Methods for Intelligence in Disaster Management – Room 3**

**Chair: Fatos Xhafa, Technical University of Catalonia, Spain**

1. Introduction of Acquiring Method for Agents Actions with Simple Ant Colony Optimization in RoboCup Rescue Simulation System

*Hisayuki Sasaoka*

2. A Bayesian Filter Approach to Modelling Human Movement Patterns for First Responders Within Indoor Locations

*Eoghan Furey, Kevin Curran, Paul Mc Kevitt*

3. A Collective Intelligence Resource Management Dynamic Approach for Disaster Management: A Density Survey of Disasters Occurrence

*Eleana Asimakopoulou, Nik Bessis, Stelios Sotiriadis, Fatos Xhafa, Leonard Barolli*

### **W-MNSA-S1: Wireless Networks – Room 4**

**Chair: Leonard Barolli, Fukuoka Institute of Technology, Japan**

1. A Framework of AP Aggregation Using Virtualization for High Density WLANs

*Takahiro Nagai, Hiroshi Shigeno*

2. A Piecewise Packet Mapping Algorithm for Video Transmission Over 802.11e Wireless Networks

*Wen-Ping Lai, Bo Li*

3. Cognitive Wireless Network for Large Scale Disaster

*Noriki Uchida, Kazuo Takahata, Yoshitaka Shibata*

4. An Extension of Active Access-Point Selection Algorithm for Throughput Maximization in Wireless Mesh Networks

*Nobuo Funabiki, Junki Shimizu, Toru Nakanishi, Kan Watanabe, Shigeru Tomisato*

### **W-MNSA-S2: Antenna and Wave Propagation – Room 5**

**Chair: Hiroshi Maeda, Fukuoka Institute of Technology**

1. Relationship Between Source Height and Distance Order of Propagation Along Random Rough Surface

*Junichi Honda, Kazunori Uchida*

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2. A Study on a Secure Wireless Link Creation Based on Multi-Path Routing Combined with Transmit Antenna Directivity Control

*Masaaki Yamanaka, Norihiko Morinaga, Shinichi Miyamoto, Seiichi Sampei*

3. Hexagonal Resonator in Two Dimensional Photonic Crystal Structure

*Hiroshi Maeda, Hiroyuki Terashima, Yongmei Zhang, Takuya Shinohara*

### **12:30 – 14:00 Lunch Break**

### **14:00 – 15:30 Parallel Sessions**

#### **INCOS-S3: E-learning – Room 1**

**Chair: Santi Caballe, Open University of Catalonia, Spain**

1. Linked Open Data for Learning Object Discovery: Adaptive e-Learning Systems

*Burasakorn Yoosooka, Vilas Wuwongse*

2. Endowing e-Learning Systems with Emotion Awareness

*Michalis Feidakis, Thanasis Daradoumis, Santi Caballé*

3. Can Games Based Learning Assists Teachers in Achieving the Aims of Curriculum to Bilingual Students of Different Ethnic Minorities?

*Konstantinos Kalemis*

4. Kindergarten Children as Story Makers. The Effect of the Digital Medium

*Tharrenos Bratitsis, Triantafyllos Kotopoulos, Kyriaki Mandila*

#### **INCOS-S4: Security and Privacy – Room 2**

**Chair: Bo Qin, Universitat Rovira i Virgili, Spain**

1. Strong Security Enabled Certificateless Aggregate Signatures Applicable to Mobile Computation

*Hu Xiong, Qianhong Wu, Zhong Chen*

2. Distributed Privacy-Preserving Secure Aggregation in Vehicular Communication

*Bo Qin, Qianhong Wu, Josep Domingo-Ferrer, Willy Susilo*

3. Linear Complexities of the Frequency Hopping Sequences in Two Optimal Sets

*Juntao Gao, Xuelian Li*

4. A Planes Detection Algorithm Based on Feature Distribution

*LuGang Zhao, ChengKe Wu*

#### **W-CIDM-S2: Critical Reviews and Applications – Room 3**

**Chair: Fatos Xhafa, Technical University of Catalonia, Spain**

1. Linked Data in Disaster Mitigation and Preparedness

*Thushari Silva, Vilas Wuwongse, Hitesh Nidhi Sharma*

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2. Rushing Attack in Mobile Ad Hoc Networks

*Abdullah Alshahrani, Saad Alshahrani*

3. Evaluation of Ad Hoc Networks in Disaster Scenarios

*D. G. Reina, S. L. Toral, F. Barrero, N. Bessis, E. Asimakopoulou*

4. An Event-based Approach to Supporting Team Coordination and Decision Making in Disaster Management Scenarios

*Fatos Xhafa, Eleana Asimakopoulou, Nik Bessis, Leonard Barolli, Makoto Takizawa*

#### **W-MNSA-S3: Security and Trustworthiness – Room 4**

**Chair: Minoru Uehara, Toyo University, Japan**

1. Using Diagonal and Horizontal Vertical Sobel Operators Spam Detection

*Peng Wan, Minoru Uehara*

2. A Fuzzy-based Trustworthiness System for JXTA-Overlay P2P Platform

*Kohei Umezaki, Evjola Spaho, Yuichi Ogata, Leonard Barolli, Fatos Xhafa, Jiro Iwashige*

3. Comparison Evaluation of Encryption Methods for a User Attestation System Using a Cellular Phone

*Noriyasu Yamamoto, Toshihiko Wakahara*

4. Steganographic Algorithm Injection in Image Information Systems Used in Healthcare Organizations

*Edlira Martiri, Artur Baxhaku, Ezmolda Barolli*

#### **W-MNSA-S4: Wireless Communication – Room 5**

**Chair: Sang-Soo Yeo, Mokwon University, Republic of Korea**

1. Electric Field Intensity Computed by DRTM in Relation to the Number of Plate Observation Points and Frequency

*Masafumi Takematsu, Junichi Honda, Kazunori Uchida*

2. Doppler Shifted Scattering from a Target Moving Along Inhomogeneous Random Rough Surface

*Shunsuke Nakashima, Junichi Honda, Kazunori Uchida*

3. Dispersive Video Frame Importance Driven Probabilistic Packet Mapping for 802.11e Based Video Transmission

*Wen-Ping Lai, En-Cheng Liou, Wei-Hao Fu*

4. Application of Horner Method to Approximate Fresnel Function

*Yuki Kimura, Junichi Honda, Kazunori Uchida*

**15:30 – 16:00 Coffee Break**

**16:00 – 17:30 Parallel Sessions**

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### **INCOS-S5: Sensor Networks – Room 1**

**Chair: Akio Koyama, Yamagata University, Japan**

1. R-MAC: A MAC Protocol for Power Reduction in Wireless Sensor Networks Based on Load Estimation and Its Performance Evaluation  
*Akio Koyama, Ryoma Watanabe, Leonard Barolli, Makoto Takizawa*
2. Analysis of Field Distribution and Density of Sensor Node  
*Junichi Honda, Kazunori Uchida*
3. A Fuzzy-based Cluster-Head Selection System for WSNs Considering Sensor Node Movement  
*Hironori Ando, Qi Wang, Leonard Barolli, Elis Kulla, Arjan Durrresi, Fatos Xhafa*
4. A Routing Protocol based on Power-Controlled Sleep Scheduling for Wireless Sensor Networks  
*Ying-Hong Wang, Yu-Chu Lin, Cheng-Hung Tsai*

### **INCOS-S6: Cloud and Grid Computing – Room 2**

**Chair: Fatos Xhafa, Technical University of Catalonia, Spain**

1. Context Parsing, Processing and Distribution in Clouds  
*Saad Liaquat Kiani, Ashiq Anjum, Nik Bessis, Richard Hill, Michael Knappmeyer*
2. Modeling Requirements for Enabling Meta-Scheduling in Inter-Clouds and Inter-Enterprises  
*Nik Bessis, Stelios Sotiriadis, Valentin Cristea, Florin Pop*
3. A Study on Operation of Photovoltaic Grid System Using Weather Forecast  
*Kenichi Fujii, Motoi Yamagiwa, Minoru Uehara*
4. On Exploitation vs Exploration of Solution Space for Grid Scheduling  
*Fatos Xhafa, Bernat Duran, Joanna Kolodziej, Leonard Barolli, Makoto Takizawa*

### **W-CIDM-S3: Network Applications for Disaster Management – Room 3**

**Chair: Kazunori Uchida, Fukuoka Institute of Technology, Japan**

1. Allocation of Base Stations by Using PSO Method  
*Jun-Hyuck Lee, Junichi Honda, Kazunori Uchida*
2. Performance Evaluation of MANET Testbed in a Mixed Indoor and Outdoor Environment  
*Masahiro Hiyama, Elis Kulla, Makoto Ikeda, Leonard Barolli, Jiro Iwashige*
3. Performance Evaluation of a Fuzzy-based Integrated CAC and Handover System for Cellular Networks  
*Leonard Barolli, Gjergji Mino, Elis Kulla, Akio Koyama, Jiro Iwashige*

### **W-MNSA-S5: Authentication Systems – Room 4**

**Chair: Kenzi Watanabe, Wakayama University, Japan**

1. A Seamless Connection for Authentication Required Web Sites by Shibboleth  
*Kenzi Watanabe, Makoto Otani*

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2. A New One-time Authentication System Using a Cellular Phone with FeliCa Chip

*Yusuke Kowakame, Toshihiko Wakahara*

3. A Fair Exchange Protocol for Attribute Certification

*Yuji Suga*

4. Detection and Prohibition of NAPT for Network User Authentication System “Opengate”

*Mitsuhiro Suenaga, Makoto Otani, Kenzi Watanabe*

#### **W-MNSA-S6: E-learning Systems and Applications – Room 5**

**Chair: Hiroaki Nishino, Oita University, Japan**

1. The Best Learning Order Inference Based on Blue-Red Trees of Rule-Space Model for Social Network-Case in ITE Course

*Yung-Hui Chen, Lawrence Y. Deng, Ku-Chen Huang*

2. Micro E-Board: An Interactive Teaching Aid Using Mobile Devices

*Hiroaki Nishino, Shota Hidaka, Tsuneo Kagawa, Kouichi Utsumiya*

3. A Support System Using Moodle for Improving Students Understanding

*Wei-Yong Zhao, Toshihiko Wakahara*

**19:00 – 21:00 Welcome Reception Party**

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## **Thursday, December 1, 2011**

### **09:00 – 10:30 Single Session**

#### **IEEE INCOS-2011 Keynote Talk II:**

Networks with Diversity and Their Technologies

*Prof. Yuji Oie, Kyushu Institute of Technology, Japan*

### **10:30 – 11:00 Coffee Break**

### **11:00 – 12:30 Parallel Sessions**

#### **INCOS-S7: Wireless Mesh and Sensor Networks – Room 1**

**Chair: Sang-Soo Yeo, Mokwon University, Republic of Korea**

1. A Study on the Performance of Wireless Localization System Based on AoA in WSN Environment  
*Yang Sun Lee, Ji-Min Lee, Sang Soo Yeo, Jong Hyuk Park, Leonard Barolli*
2. A Tabu Search Algorithm for Efficient Node Placement in Wireless Mesh Networks  
*Fatos Xhafa, Christian Sanchez, Admir Barolli, Makoto Takizawa*
3. Comparison Evaluation of Static and Mobile Sensor Nodes in Wireless Sensor Networks Considering Packet-loss and Delay Metrics  
*Tao Yang, Leonard Barolli, Jiro Iwashige, Arjan Durrezi, Fatos Xhafa*
4. MS2HM: A Multimedia Service Session Handoff Method between Heterogeneous Wireless Networks  
*Yulong Shen, Zhiwei Zhang, Jianfeng Ma, Qingqi Pei, Qijian Xu, Hao Yin*

#### **W-MNSA-S7: Performance Evaluation – Room 2**

**Chair: Tomoya Enokido, Risho Univeristy, Japan**

1. The Evaluation of Time Transferred, CPU Consumption and Memory Utilization in XEN-PV, XEN-HVM, OpenVZ, KVM-FV and KVM-PV Hypervisors by Using FTP and HTTP Approaches  
*Igli Tafa, Ermal Beqiri, Hakik Paci, Elinda Kajo, Aleksander Xhuvani*
2. Performance of a Stable Unit Active Queue Management  
*Fumihiko Nakamura, Takuo Nakashima*
3. Design and Implementation of 3D MeshRAID in Virtual Large-Scale Disks  
*Minoru Uehara*
4. Evaluation of the Improved EPCLB Algorithm for Distributed Applications  
*Tomoya Enokido, Makoto Takizawa*

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**W-WIND-S1: Network Design Method – Room 3**

**Chair: Hiroshi Koide, Kyushu Institute of Technology, Japan**

1. Approximation Algorithm for Finding Protected Links to Keep Small Diameter Against Link Failures  
*Koji Imagawa, Takeshi Fujimura, Hiroyoshi Miwa*
2. Network Design Method by Link Protection for Network Load Alleviation Against Failures  
*Akira Noguchi, Takeshi Fujimura, Hiroyoshi Miwa*
3. A Generic Approach to Multi-Fairness and Its Application to Wireless Channel Allocation  
*Mario Koeppen, Kaori Yoshida, Masato Tsuru*
4. MVA Modeling of Multi-core Server Distributed Systems  
*Yuki Nakamizo, Hiroshi Koide, Kazumi Yoshinaga, Dirceu Cavendish, Yuji Oie*

**W-MIST-S1: Keynote and Invited Paper – Room 4**

**Chair: Ilsun You, Korean Bible University, Republic of Korea**

1. **Keynote Talk:** From Insider Threats to Business Processes that are Secure-by-Design  
*Dieter Gollmann*
2. **Invited Industrial Paper:** On Data Importance Analysis  
*Shinsaku Kiyomoto, Yutaka Miyake*

**W-ALICE-S1: E-learning Systems – Room 5**

**Chair: Santi Caballe, Open University of Catalonia, Spain**

1. **Keynote Talk:** Knowledge Constructive Jigsaw as an Adaptive Learning Framework: Its Design Principles and Network Supports  
*Naomi Miyake*
2. An Ontology-based System for Context-aware e-Learning  
*Nicola Capuano, Matteo Gaeta, Saverio Salerno, Guseppina Rita Mangione*
3. An Integrated Model for e-Assessment of Learning Experiences Enriched with Complex Learning Resources  
*Mohammad Al-Smadi, Margit Hoefler, Christian Guetl*

**12:30 – 14:00 Lunch Break**

**14:00 – 15:30 Parallel Sessions**

**INCOS-S8: Parallel and Distributed Architectures – Room 1**

**Chair: Sang Oh Park, Chung-Ang University, Republic of Korea**

1. An Alternative Implementation of 3FT RAID in Virtual Large Scale Disks  
*Minoru Uehara*

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2. An OpenMP Compiler for Hybrid CPU/GPU Computing Architecture

*Hung-Fu Li, Tyng-Yeu Liang, Jhen-Lin Jiang*

3. Energy Efficient Distributed Systems for Storage Servers

*Takuro Inoue, Ailixier Aikebaier, Tomoya Enokido, Makoto Takizawa*

4. Fast Parallel Computation of Tate Pairing

*Zhitu Su, Chunhui Sun, Hui Li, Jianfeng Ma, Kai Fan*

#### **W-MNSA-S8: Cloud Computing – Room 2**

**Chair: Jason C. Hung, Overseas Chinese University, Taiwan**

1. A Smart-Travel System Based on Social Network Service for Cloud Environment

*Jason C. Hung, Victoria Hsu, Yu-Bing Wang*

2. Evaluation of Bottlenecks in an Educational Cloud Environment

*Shinichi Kibe, Minoru Uehara, Motoi Yamagiwa*

#### **W-WIND-S2: Network Architecture and Performance – Room 3**

**Chair: Akira Nagata, Network Application Engineering Laboratories Ltd., Japan**

1. Store-carry-forward Based Networking Infrastructure: Vision and Potential

*Shinya Yamamura, Akira Nagata, Tsuru Masato*

2. Development of IPv6/IPv4 Translator Using High Performance Packet Processing Engine

*Ryo Sasaki, Makoto Otani, Kenzi Watanabe*

3. Influence of Interference with Moving Terminal in Wireless LAN Environment and Evaluation of Behavior of QoS-TCP

*Remi Ando, Tutomu Murase, Masato Oguchi*

4. Selecting Measurement Paths for Efficient Network Monitoring and Diagnosis Under Operational Constraints

*Atsuo Tachibana, Shigehiro Ano, Masato Tsuru*

5. Protocol Enhancement for Near Field Communication (NFC), Future Direction and Cross-Layer Approach

*Hiroshi Sakai, Akira Arutaki*

#### **W-MIST-S2: Managing Insider Threat – Room 4**

**Chair: Ilsun You, Korean Bible University, Republic of Korea**

1. Insider Threats are Getting Worse Within Industries: Isolated Secondary Backup Required

*Kwangjin Bae, Sungjin Kim, Yongoo Lee, Ilsun You, Kangbin Yim, Taeho Son*

2. Towards Countermeasure of Insider Threat in Network Security

*Yoshiaki Hori, Takashi Nishide, Kouichi Sakurai*



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3. Towards Detecting Suspicious Insiders by Triggering Digital Data Sealing

*Takayuki Sasaki*

4. A Mechanism on Risk Analysis of Information Security with Dynamic Assessment

*Chien-Ting Kuo, He-Ming Ruan, Chin-Laung Lei, Shih-Jen Chen*

#### **W-ALICE-S2: Adaptive Learning and Collaborative Systems – Room 5**

**Chair: Jose Mangione, University of Salerno, Italy**

1. The Evaluation of ReCoNote Summaries for Learner-Centered Integration

*Sayaka Tohyama, Naomi Miyake*

2. A Framework for Dealing with Knowledge About On-line Collaborative Learning Sessions

*Jordi Conesa, Santi Caballé, David Ganan, Josep Prieto*

3. CC-LO: a New Type of Learning Object for the Virtualization of Live Collaborative Sessions

*Santi Caballé, Néstor Mora, Ian Dunwell, David Gañán*

4. Interoperability Scenarios to Measure Informal Learning Carried Out in PLEs

*Miguel Conde, Francisco García-Penalvo, Marc Alier*

5. Emotion Measurement in Intelligent Tutoring Systems: What, When and How to Measure

*Michael Feidakis, Thanasis Daradoumis, Santi Caballé*

#### **15:30 – 16:00 Coffee Break**

#### **16:00 – 17:30 Poster Session & Parallel Sessions**

##### **Poster Session – “Coffee Break” Room**

**Chair: Masato Tsuru, Kyushu Institute of Technology, Japan**

1. Design and Implementation of a Dynamic Reconfigurable Classroom for Cooperative Learning

*Hideki Kondo, Hiroyuki Narahara*

2. Study on Energy-efficient Routing Protocol based on Experimental Evaluation

*Satoru Akimoto, Hitomi Tamura, Kenji Kawahara, Yoshiaki Hori*

3. A New Generation Network Architecture to Accommodate Virtual Network Application Services

*Hiroaki Yamanaka, Masayoshi Shimamura, Shuji Ishii, Eiji Kawai, Katsuyoshi Iida, Tsuru Masato*

4. Heuristic Information Retrieval Using Variable Identifiers in Mobile Ad-hoc Networks

*Kazuki Kume, Kei Ohnishi, Kazuya Tsukamoto, Shinya Yamamura, Akira Nagata*

5. Q-learning Based p-persistent CSMA MAC Protocol for Secondary User of Cognitive Radio Networks

*Sarena Bao, Takeo Fujii*

6. Performance Evaluation of Power Saving Scheme for Wireless LAN with Station Aggregation

*Daiki Nobayashi, Yutaka Fukuda, Takeshi Ikenaga, Kazumi Kumazoe, Tetsuya Ito*

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7. P2P-based Contents Distribution Method Using Network Coordinates System  
*Hiroshi Yamamoto, Katsuyuki Yamazaki*
  8. An Information Search Method Based on Management Area Segmentation with Multiple Mobile Agents in Unstructured Peer-to-Peer Networks  
*Takayuki Yamamoto, Shinji Sugawara, Yutaka Ishibashi*
  9. Efficient Contents Sharing Using Differences between Versions in Peer-to-Peer Networks  
*Toshinobu Hayashi, Shinji Sugawara, Yutaka Ishibashi*
  10. Implementation of Activity Recognition From Accelerometers on Mobile Phones  
*Go Hirakawa, Thin Thin Nwe, Yuichi Hattori, Sozo Inoue*
  11. Low-Latency Normalization Method for Multi-User MIMO System Using Vector Perturbation Precoder  
*Shogo Fujita, Leonardo Lanante Jr., Yuhei Nagao, Masayuki Kurosaki, Hiroshi Ochi*

#### **W-MIST-S3: Related Technologies 1 – Room 4**

**Chair: Shinsaku Kiyomoto, KDDI R&D Lab., Japan**

1. A Forensic Analysis of Images on Online Social Networks  
*Aniello Castiglione, Giuseppe Cattaneo, Alfredo De Santis*
2. On the Construction of a False Digital Alibi on the Android OS  
*Pietro Albano, Aniello Castiglione, Giuseppe Cattaneo, Giancarlo De Maio, Alfredo De Santis*
3. Development of Network User Authentication Gateway System Using “High Performance Packet Processing Engine”  
*Yuki Wakamizu, Makoto Otani, Kenzi Watanabe*
4. KVM-based Detection of Rootkit Attacks  
*Xingjun Zhang, Endong Wang, Long Xin, Zhongyuan Wu, Weiqing Dong, Xiaoshe Dong*

#### **W-ALICE-S3: E-learning Applications and Algorithms – Room 5**

**Chair: Santi Caballe, Open University of Catalonia, Spain**

1. Blended Game-Based Learning Environments: Extending a Serious Game Into a Learning Content Management System  
*Ian Dunwell, Panagiotis Petridis, Sylvester Arnab, Aristidis Protopsaltis, Maurice Hendrix, Sara de Freitas*
2. A New Model for Storytelling Complex Learning Objects  
*Giuseppina Rita Mangione, Francesco Orciuoli, Anna Pierri, Pierluigi Ritrovato, Marcello Rosciano*
3. Exploring Fish School Algorithm for Improving Turnaround Time: An Experience of Content Retrieval  
*Soumya Banerjee, Santi Caballé*

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4. Exploring Learning Pattern in Social Network

*Soumya Banerjee, Santi Caballé*

5. Ethnic Immigrant Minorities and Mobile Learning for Schools - A Class Without Walls, A New Didactic Approach to Digital Literacy Across the Curriculum

*Konstantinos Kalemis*

**19:00-21:00 Conference Banquet**

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## **Friday, December 2, 2011**

### **09:00 – 10:30 Parallel Sessions**

#### **INCOS-S9: Collaborative and Intelligent Systems – Room 1**

**Chair: Jordi Conesa, *Open University of Catalonia, Spain***

1. Challenges in Automating Collaborative Negotiations  
*Raiye Hailu, Takayuki Ito*
2. Knowledge Reuse: Its Role and Implications for Upper Level Ontologies  
*Jordi Conesa, Veda C. Storey, Vijayan Sugumaran, Santi Caballé*
3. Generation of Offensive Strategies in Robot Soccer Game  
*Jie Wu, Vaclav Svaton, Jan Martinovic, Eliska Ochodkova, Vaclav Snašel*
4. An Exploratory Social Network Analysis of Academic Research Networks  
*Sergio Toral, Nik Bessis, M.R. Martinez-Torres, Florian Franc, Federico Barrero, Fatos Xhafa*

#### **INCOS-S10: Authentication and Signatures – Room 2**

**Chair: Leonard Barolli, *Fukuoka Institute of Technology, Japan***

1. Homomorphic Linear Authentication Schemes for Proofs of Retrievability  
*Shengli Liu, Kefei Chen*
2. Forward Secure Proxy Blind Signature Scheme  
*Kai Fan, Yue Wang, Hui Li*
3. A New Strong Multiple Designated Verifiers Signature for Broadcast Propagation  
*Haibo Tian*
4. Abuse-freeness Electronic Payment Protocol  
*Kai Fan, Yue Wang, Hui Li*

#### **W-MNSA-S9: P2P Networks – Room 3**

**Chair: Makoto Takizawa, *Seikei University, Japan***

1. A Fuzzy-based System for Data Replication in P2P Networks  
*Evjola Spaho, Leonard Barolli, Fatos Xhafa, Jiro Iwashige, Akio Koyama*
2. Multimedia Quorum-based (MQB) Protocol in P2P Networks  
*Tadateru Ohkawara, Ailixier Aikebaier, Tomoya Enokido, Makoto Takizawa*
3. Performance Evaluation of SmartBox End-Device for Medical Applications Using JXTA-Overlay P2P System  
*Yuichi Ogata, Kohei Umezaki, Evjola Spaho, Keita Matsuo, Leonard Barolli, Jiro Iwashige*

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4. Trustworthy Group Based Agreement Protocol in Scalable Distributed Networks

*Ailixier Aikebaier, Tomoya Enokido, Makoto Takizawa*

#### **W-MNSA-S10: Multimedia Systems – Room 4**

**Chair: Hiroaki Nishino, Oita University, Japan**

1. Development of Medical Imaging Diagnosis Support System with Sound Effects

*Tsuneo Kagawa, Hideki Kudo, Shuichi Tanoue, Hiro Kiyosue, Hiromu Mori, Hiroaki Nishino, Kouichi Utsumiya*

2. A Seminar Record Editing Algorithm

*Natthapong Udomkarn, Toshihiko Wakahara*

3. An Efficiency of Optimization Method of Sign Sound Using Interactive Differential Evolution

*Makoto Fukumoto, Shintaro Ogawa*

4. Measurement of Reading Characteristics of Multiplexed Image in QR Code

*Damri Samretwit, Toshihiko Wakahara*

#### **W-MIST-S4: Cryptographic Technologies for Managing Insider Threats – Room 5**

**Chair: Yoshiaki Hori, Kyushu University, Japan**

1. Security of Offline Anonymous Electronic Cash Systems Against Insider Attacks by Untrusted Authorities Revisited

*Takashi Nishide, Kouichi Sakurai*

2. Certificateless Ordered Sequential Aggregate Signature Scheme

*Naoto Yanai, Raylin Tso, Masahiro Mambo, Eiji Okamoto*

3. Image Based Crypto-Biometrics Key Generation

*Marek R. Ogiela, Lidia Ogiela*

4. Multi-Authority Attribute-based Signature

*Dan Cao, Baokang Zhao, Xiaofeng Wang, Jinshu Su*

**10:30 – 11:00 Coffee Break**

**11:00 – 12:30 Parallel Sessions**

#### **INCOS-S11: Ad-hoc Networks – Room 1**

**Chair: Tetsuya Shigeyasu, University of Hiroshima, Japan**

1. Comparison of Experimental Results of a MANET Testbed in Different Environments Considering BATMAN Protocol

*Elis Kulla, Masahiro Hiyama, Makoto Ikeda, Leonard Barolli*

2. Investigation Into BATMAN-adv Protocol Performance in an Indoor Mesh Potato Testbed

*Edmundo Chissungu, Edwin Blake, Hanh Le*

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3. Mobile Ad-hoc Network Routing Protocols Performance Evaluation Using NS-3 Simulator

*Makoto Ikeda, Masahiro Hiyama, Elis Kulla, Leonard Barolli*

4. A New Slot Assignment Method for Slotted CSMA Based on Maximum Clique Extraction

*Tetsuya Shigeyasu, Xiong Liu, Hiroshi Matsuno*

#### **INCOS-S12: Network Protocols, Algorithms and Search – Room 2**

**Chair: Mario Koeppen, *Kyushu Institute of Technology, Japan***

1. Node Degree-Aware Link Cost for Traffic Load-Distribution in Large-Scale Networks

*Hitomi Tamura, Mario Koeppen, Masato Uchida, Masato Tsuru, Yuji Oie*

2. A perfSONAR-based Integrated Multi-domain Network Measurement Platform - Internet Monitoring as a Service -

*Katsuichi Nakamura, Masato Tsuru, Yuji Oie*

3. Exploring Web Search Behavior Patterns to Personalize the Search Results

*Walisa Romsaiyud, Wichian Premchaiswadi*

4. HGRP: Hybrid Grid Routing Protocol for Heterogeneous Hierarchical Wireless Networks

*Yulong Shen, Qingqi Pei, Ning Xi, Jianfeng Ma, Qijian Xu, Hao Yin*

#### **W-MNSA-S11: Multimedia Tools Techniques – Room 3**

**Chair: Hiroyuki Fujioka, *Fukuoka Institute of Technology, Japan***

1. A New Research Support System

*Toshihiko Wakahara, Noriyasu Yamamoto, Natthapong Udomkarn, Damri Samretwit, Wei Yong Zhao*

2. Reshaping and Reconstructing Handwritten Character Typeface Using Dynamic Font Model

*Hiroyuki Fujioka, Shinya Miyata*

3. Performance Evaluation of User Interfaces According to User Computer Skill and Computer Specifications

*Shinichi Inenaga, Kaoru Sugita, Tetsushi Oka, Masao Yokota*

4. A Graph Theoretic Algorithm for Recovering Drawing Order of Multi-Stroke Handwritten Images

*Takayuki Nagoya, Hiroyuki Fujioka*

5. FOAF-Academic Ontology: a Vocabulary for the Academic Community

*Edlira Kalemi, Edlira Martiri*

#### **W-WKED-S1: International Workshop on Kansei Engineering and Design – Room 3**

**Chair: Kaori Yoshida, *Kyushu Institute of Technology, Japan***

1. Recommendation System Based on Competing Algorithms

*E. Mazandarani, K. Yoshida, M. Koeppen, W. Bodrow*

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2. Color Effect on Subjective Perception of Progress Bar Speed  
*Kentaro Hamada, Kaori Yoshida, Kei Ohnishi, Mario Koeppen*
  3. A Study on Information Recommendation Systems for Continuous Use  
*Hiroko Shoji, Hiroo Inamura, Akihiro Ogino*
  4. Measurement and Classification of the Affective Value of Drum Rhythm Patterns  
*Yuta Kurotaki, Hisao Shiizuka*
  5. Kansei/Affective Decision Making  
*Hisao Shiizuka, Ayako Hashizume*

**W-MIST-S5: Related Technologies 2 – Room 4**

**Chair: Kangbin Yim, Soonchunhyang University, Republic of Korea**

1. Characterizing and Classifying Card-Sharing Traffic Through Wavelet Analysis  
*Aniello Castiglione, Alfredo De Santis, Francesco Palmieri*
2. The AVQ Algorithm: Watermarking and Compression Performances  
*Raffaele Pizzolante, Bruno Carpentieri, Aniello Castiglione, Giancarlo De Maio*
3. A Scalable Fault Management Architecture for ccNUMA Server  
*Yan Yang, Xingjun Zhang, Endong Wang, Nan Wu, Xiaoshe Dong*
4. Software-based Detecting and Recovering from ECC-Memory Faults  
*Xingjun Zhang, Endong Wang, Dong Zhang, Yu Wang, Weiguo Wu, Xiaoshe Dong*
5. Characterizing Time-Varying Behavior and Predictability of Cache AVF  
*Yu Cheng, Yongwen Wang, Zuocheng Xing, Minxuan Zhang*

**12:30 – 14:00 Lunch Break**

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## Additional Information

### Travel to Conference Venue

#### Access to Fukuoka Institute of Technology

FIT is located very close to “Fukkodai-Mae” station (the Station in the front of FIT) of JR (Japan Railways) Kagoshima Line. It takes about 3 minutes on foot from the train station to the main building of the university.

- **From JR Hakata Station**

Take JR train from Hakata Station (Kagoshima Line) to “Fukkodai-Mae” station. Both the local (stop at each station) and the rapid (skip some stations) trains stop at “Fukkodai-Mae” station. The local trains operate every 20 minutes and it takes about 20 minutes from Hakata station to “Fukkodai-Mae” station. The rapid trains operate every 25 minutes and it takes about 15 minutes from Hakata station to “Fukkodai-Mae” station. The ticket price is 270 yen and there is no difference in the ticket price between the local and rapid trains.

- **From Fukuoka International Airport**

Take the subway to “Hakata” station. Then transfer to “JR Kagoshima Line” and take the train for “FukkodaiMae” station. “Fukuokakuko (Airport)” subway station is located immediately below the domestic terminal. The subway fare to Hakata is 250 yen and it takes about 6 minutes. All trains from Fukuoka Airport go to Hakata. From the international terminal, there is a local bus service to Hakata Station (look for “Hakata” on the front of buses), which costs 190 yen. The other alternatives are the free shuttle buses to the domestic terminal where you can transfer to the subway, or you can take a taxi directly from the international terminal building.

- **From Hakata Harbor (Sea-Port) International Terminal**

It takes about 10 to 15 minutes to go from Hakata Harbour International Passenger Terminal to “Hakata” station or Tenjin station. The bus numbers 11 and 19 go to Hakata and bus numbers 55, 151, 152 and 209 go to Tenjin. The nearest subway station is “Gofukumachi” and it takes about 15 minutes on foot from the terminal. The other alternative is to take a taxi.

- **From Tenjin or Nakasu-Kawabata (Downtown) Area**

Take the subway to “Hakata” station. Then transfer to “JR Kagoshima Line” and take the train for “FukkodaiMae” station.

#### Taxi Information

A large number of taxis operate 24 hours and can be found in many streets in the city. Outside stations and in other places with heavy pedestrian traffic, there are also taxi stands. An empty taxi can be spotted by a red sign behind the windscreen and to the driver's left side, or at night when the rooftop sign is illuminated. Most of the taxis are “ko-gata” (small), but there are also “chu-gata” (medium size) and “o-gata” (large) size taxis, which are more expensive. The fare for a ko-gata taxi is 550 yen up to 1.2 km and for each additional 200 meters is increased 50 yen. Between 11:00 p.m. and 5:00 a.m., the fares are increased by 20%. It is not customary to tip the driver at the end of your journey. The followings are the expected fare of “ko-gata” taxi: from Fukuoka International Airport to FIT 5,000 yen; from Fukuoka International Airport to Hakata Station 1,350 yen; and from Hakata Harbor to FIT 4,500 yen.



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## Social Events

### Reception Party

November 30<sup>th</sup>, 2011     **19:00 - 21:00**

#### **OASIS Restaurant**

Fukuoka Institute of Technology (FIT)

3-30-1 Wajiro-Higashi, Higashi-Ku,

Fukuoka 811-0295

Tel.: 092-606-2204

### Banquet Party

December 1<sup>st</sup>, 2011     **19:00 - 21:00**

#### **Hakata Centraza Hotel**

4-23, Chuogai, Hakataeki, Hakata-ku, Fukuoka-shi,

Fukuoka 812-0012

Tel: +81-92-461-0111

## Internet Access

During the Conference days there will be wireless connection around university campus.

**SSID:** incosatfit

**Key:** kincos2011fit

## Local Contact

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