Program Guide

EUSPN 2013
The 4th International Conference on Emerging Ubiquitous Systems and Pervasive Networks

ICTH 2013
The 3rd International Conference on Current and Future Trends of Information and Communication Technologies in Healthcare

October 21-24, 2013
Niagara Falls, Ontario, Canada

With Support of
Acadia University, Canada
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## Conferences
### Symposia and Workshops

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<th>Conference</th>
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<td>EUSPN</td>
<td>The 4th International Conference on Emerging Ubiquitous Systems and Pervasive Networks</td>
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<tr>
<td>ICTH</td>
<td>The 3rd International Conference on Current and Future Trends of Information and Communication Technologies in Healthcare</td>
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<tr>
<td>ComSense</td>
<td>The 2013 International Workshop on Communications and Sensor Networks</td>
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<td>AASNET</td>
<td>The 5th International Symposium on Applications of Ad hoc and Sensor Networks</td>
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<tr>
<td>BASNet</td>
<td>The International Workshop on Body Area Sensor Networks</td>
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<td>SsS</td>
<td>Students Symposium</td>
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## EUSPN 2013, ICTH 2013 and Workshops Program Time Slots

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<th>October 21, 2013</th>
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<td><strong>Registration</strong></td>
<td>17:00 - 19:00</td>
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<th>Canadian A</th>
<th>Canadian B</th>
<th>King George</th>
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<tr>
<td><strong>Registration</strong></td>
<td>08:30 - 10:30</td>
<td></td>
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<tr>
<td><strong>Opening</strong></td>
<td>10:30 - 11:00</td>
<td>Conference Opening (Niagara room)</td>
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<tr>
<td><strong>Keynote</strong></td>
<td>11:00 - 12:00</td>
<td>Keynote (Niagara room)</td>
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<tr>
<td><strong>Lunch</strong></td>
<td>12:00 - 13:20</td>
<td>Brock room</td>
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<tr>
<td><strong>Session</strong></td>
<td>13:30 - 15:00</td>
<td>EUSPN 1</td>
<td>ICTH 1</td>
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<tr>
<td><strong>Tea/Coffee</strong></td>
<td>15:00 - 15:30</td>
<td>Brock Room</td>
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<tr>
<td><strong>Session</strong></td>
<td>15:30 - 17:00</td>
<td>EUSPN 2</td>
<td>ICTH 2</td>
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<tr>
<td><strong>Reception</strong></td>
<td>18:30 - 20:00</td>
<td>Brock Room</td>
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<th>October 23, 2013</th>
<th>Canadian A</th>
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<tr>
<td><strong>Session</strong></td>
<td>08:30 - 10:00</td>
<td>EUSPN 3</td>
<td>ICTH 3</td>
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<tr>
<td><strong>Tea/Coffee</strong></td>
<td>10:00 - 10:30</td>
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<td><strong>Session</strong></td>
<td>10:30 - 12:00</td>
<td>EUSPN 4</td>
<td>ICTH 4</td>
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<tr>
<td><strong>Lunch</strong></td>
<td>12:00 - 13:30</td>
<td>Brock room</td>
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<tr>
<td><strong>Session</strong></td>
<td>13:30 - 15:00</td>
<td>EUSPN 5</td>
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<tr>
<td><strong>Tea/Coffee</strong></td>
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<td><strong>Session</strong></td>
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<td>EUSPN 7</td>
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<tr>
<td><strong>Banquet</strong></td>
<td>19:30 - 22:00</td>
<td>Niagara Room</td>
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<th>October 24, 2013</th>
<th>Canadian A</th>
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<tr>
<td><strong>Session</strong></td>
<td>08:30 - 10:00</td>
<td>EUSPN 8</td>
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<tr>
<td><strong>Coffee Break</strong></td>
<td>10:00 - 10:30</td>
<td>Brock Room</td>
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<tr>
<td><strong>Session</strong></td>
<td>10:30 - 12:00</td>
<td>EUSPN 9</td>
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**Event Ends**
Keynote
Security of Big Data

Zygmunt J. Haas

School of Electrical Engineering
Cornell University, USA

http://people.ece.cornell.edu/haas

Abstract:
It is estimated that over 200 million emails, 100 thousand tweets, and over 2 million search queries are transferred across the Internet every minute, for the whopping total of 640 TB of data in one “Internet Minute.” That’s a mind-boggling number and it is anticipated to persist in its growth. In particular, technologies such as the Internet-of-Things, Sensor Networks, and Cloud Computing will continue to expand the volume of information that we generate, store, and communicate.

But not all is glorious -every minute, there are also 20 new victims of Internet identity theft. The wealth of big data that we all benefit from requires appropriate protection measures to guard against misuse and to ensure information privacy. And although the basic goals and threats of security of big data remain the same, the complexity associated with the new challenges can be so large that novel approaches are needed to achieve the same degree of protection. In other words, as the size of the data grows, the old unscaleable methods used to secure information become prohibitively inefficient and new approaches are needed. And unless we are able to come up with innovative solutions, the progress of the technologies will be hindered by our inability to protect our data.

In this talk, I will introduce some of today’s and tomorrow’s challenges in processing, storing, and transmission of big data that the security engineers and scientists face. This will be followed by a discussion of a number of possible new schemes to address these problems, focusing in more details on a couple of such schemes.

Biography:
Zygmunt J. Haas received his B.Sc. in 1979, his M.Sc. in 1985, and his Ph.D. in 1988 from Stanford University, all in Electrical and Computer Engineering. In 1988, he joined the AT&T Bell Laboratories in the Network Research Area. There he pursued research in wireless communications, mobility management, fast protocols, optical networks, and optical switching. In August 1995, he joined the faculty of the School of Electrical and Computer Engineering at Cornell University, where he is now a Professor. He heads the Wireless Network Laboratory (http://wnl.ece.cornell.edu/), a research group with extensive contributions and international recognition in the area of Ad Hoc Networks and Sensor Networks.

Dr. Haas is an IEEE Fellow and an author of over 200 technical conference and journal papers and holds eighteen patents in the areas of wireless networks and wireless communications, optical switching and optical networks, and high-speed networking protocols. He won a number of awards and distinctions, including "Best Paper" awards and the 2012 IEEE ComSoc WTC Recognition Award for "outstanding achievements and contribution in the area of wireless communications systems and networks". Dr. Haas chaired and co-chaired several key conferences in the communications and networking areas, organized many workshops, delivered numerous tutorials at major IEEE and ACM conferences, and served as an IEEE ComSoc
Distinguished Lecturer. He has been editor of many journals and magazines, including the IEEE Transactions on Networking, the IEEE Transactions on Wireless Communications, the IEEE Communications Magazine, and the Springer Wireless Networks journal (WINET). He has been a guest editor of a number of IEEE Communications Magazine special issues and several of IEEE JSAC issues; e.g., "Gigabit Networks," "Mobile Computing Networks," and "Ad-Hoc Networks." Dr. Haas served as a Chair of the IEEE Technical Committee on Personal Communications and as the Chair of the Steering Committee of the IEEE Pervasive Computing magazine. His interests comprise: mobile and wireless communication and networks, modeling and performance evaluation of large and complex systems, and biologically-inspired networks, FCST, MSN, and is/was Workshop Chair at IEEE INFOCOM 2011, IEEE MASS-09, ACM Mobihoc-07&08.
Monday, October 21, 2013

**Registration** 17:00-19:00
Room: Lobby Boardroom

**Tuesday, October 22, 2013**

**Registration** 08:30-10:15
Room: Lobby Boardroom

**Opening** 10:30 - 11:00
Opening Ceremony
Room: Niagara room

**Keynote** 11:00 - 12:00

**Security of Big Data**
Zygmunt J. Haas, Cornell University, USA
Session Chair: Ridha Khedri, McMaster University, Canada
Room: Niagara room

**Lunch** 12:00 - 13:30
Room: Brock room

**Technical Sessions** 13:30 - 15:00

**EUSPN Session 1**: Autonomic and Pervasive Network Management
**Session Chair**: Alireza Nafarieh, Dalhousie University, Canada
**Room**: Canadian A

Adaptive Green Routing Mechanism over Optical Networks
*Yashar Fazili, Alireza Nafarieh and William Robertson*

Personalized Security Approaches in E-Banking Employing Flask Architecture over Cloud Environment
*Nayer Hamidi, Mahdi Rahimi Ghazi Kalayeh, Alireza Nafarieh, Ali Hamidi and Bill Robertson*

Dynamic Inter-domain Negotiation for Green Algorithms in Optical Networks
*Alireza Nafarieh, Yashar Fazili and William Robertson*

Analysis of Lightpath Re-provisioning in Green Optical Networks
*Alireza Nafarieh, Yashar Fazili and William Robertson*
**ICTH Session 1**: Analysis and Evaluation of Healthcare Systems  
**Session Chair**: Davy Preuveneers, KU Leuven, Belgium  
**Room**: Canadian B

A User-Friendly Tool for Model Checking Healthcare Workflows  
*Adrian Rutle, Fazle Rabbi, Wendy MacCaull, Yngve Lamo*

Towards Intelligent Personal Health Record Systems: review, criteria and extensions  
*Irini Genitsaridi, Haridimos Kondylakis, Lefteris Koumakis, Kostas Marias and Manolis Tsiknakis*

Barriers to Health Information Systems and Electronic Medical Records Implementation in Middle East Hospitals. A Field Study of Saudi Arabian Hospitals  
*Mohamed Khalifa*

Personal Health Service Framework  
*Shirin Ghorbani and Weichang Du*

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**Coffee Break**  
15:00 - 15:30

*Room*: Brock room

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**Technical Sessions**  
15:30 - 17:00

**EUSPN Session 2**: Databases and Ubiquitous Data Management  
**Session Chair**: Sahel Alouneh, German Jordanian University, Jordan  
**Room**: Canadian A

An Algebraic Approach Towards Data Cleaning  
*Ridha Khedri, Fei Chiang and Khair Eddin Sabri*

OBAME: Optimized Bio-inspired Algorithm to Maximize Search Efficiency in P2P Databases  
*Heba Kurdi, Thanaa Alnusairi and Hajar Almuajed*

Data Programming for Non-Programmers  
*Dave Mason*

A new Data Mining System for ontology learning Taking CRISP-DM-OWL as a case  
*Choukri Djellali*

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**ICTH Session 2**: Clinical Data and Knowledge Management  
**Session Chair**: Weichang Du, University of New Brunswick, Canada  
**Room**: Canadian B

Analyzing the impact of UMLS relations on the Word Sense Disambiguation accuracy  
*Wessam Gad El-Rab, Osmar Zaiane and Mohammad El-Hajj*

Transparent Digital Watermark on Drug’s Images  
*Chaiwoot Seetha, Suthida Goollawattanaporn and Chularat Tanprasert*

Apnea Detection Based on Respiratory Signal Classification  
*Laiali Almazaydeh, Khaled Elleithy, Miad Faezipour and Ahmad Abushakra*

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**Reception**  
18:30-20:00

*Room*: Brock room
Wednesday, October 23, 2013

Technical Sessions 8:30 - 10:00

EUSPN Session 3: Internet of Things I
Session Chair: Nik Bessis, University of Derby, UK
Room: Canadian A

Centralized Micro-Clouds: An infrastructure For Service Distribution In Collaborative Smart Devices
Eleana Asimakopoulou, Stelios Sotiriadis, Nik Bessis, Ciprian Dobre and Valentin Cristea

Authentication Systems Using ID Cards over NFC Links: the Spanish Experience using DNIe
Jose Maria Leon Coca, Daniel Gutierrez Reina, Sergio Toral, Federico Barrero and Nik Bessis

Performance evaluation of interoperable micro-clouds
Stelios Sotiriadis, Eleana Asimakopoulou, Nik Bessis, Florin Pop and Valentin Cristea

An Autonomic Agent Trust Model for IoT systems
Xiaolong Xu, Nik Bessis and Jialun Cao

ICTH Session 3: Information and Knowledge Processing in Healthcare Environments
Session Chair: Chularat Tanprasert, National Electronics and Computer Tech Center, Thailand
Room: Canadian B

The future of mobile e-health application development: exploring HTML5 for a context-aware diabetes monitoring
Davy Preuveneers, Yolande Berbers and Wouter Joosen

Tennis Racket Customization for Supporting Rehabilitation
Thitipong Tanprasert and Chularat Tanprasert

Identification Protocols Based on Discrete Log Representation Problem
Moahmed Rasslan and Mahmoud Mohamed Nasreldin

Security Techniques for Counteracting Attacks in Mobile Healthcare Services
Udaya Tupakula and Vijay Varadharajan

Coffee Break 10:00 - 10:30
Room: Brock Room

Technical Sessions 10:30 - 12:00

EUSPN Session 4: Internet of Things II
Session Chair: Nik Bessis, University of Derby, UK
Room: Canadian A

The Talking Museum Project
Flora Amato, Angelo Chianese, Antonino Mazzeo, Vincenzo Moscato, Antonio Picariello, Francesco Piccialli

Guidelines for Internet of Things deployment approaches – The Thing Commandments
Edewede Oriwoh and Paul Sant

Interaction System Based on Internet of Things As Support For Education
Jorge Gomez, Juan Huete, Oscar Hoyos, Luis Perez and Daniela Grigori

Usage-pattern Based Statistical Web Testing and Reliability Measurement
Chao Chen, Yihai Chen, Huaikou Miao and Hao Wang
ICTH Session 4: Context-aware Applications for Patient Monitoring and Care
Session Chair: Mohamed Khalifa, King Faisal Hospital and Research Center, Saudi Arabia
Room: Canadian B

Towards a Context-Aware Biofeedback Activity Recommendation Mobile Application for Healthy Lifestyle
   Hawazin Badawi and Abdulmotaleb El Saddik
Context-based and Rule-based Adaptation of Mobile User Interfaces in mHealth
   Reem Alnanih, Olga Ormandjieva and Thiruvengadam Radhakrishnan
Proceed with Caution: Transition from Paper to Computerized Pain Body Maps
   Ellen Jaatun, Dagny Faksvåg Haugen, Yngve Dahl and Anders Kofod-Petersen
A Feasibility Study Scheme of an Android-based Integrated Wearable ECG Monitoring System Implementation
   Arini Widhiasi, Rosnah Idrus, Muhammad Fermi Pasha and Mohammad Syukur

AASNET Symposium
Session Chair: Tarek Sheltami, King Fahd University, Saudi Arabia
Room: King George

Selective Power Aware Data Management Approach for Wireless Sensor Networks
   Hazem Morsy, Hesham El-Rewini
Satellite Monitoring of Wireless Sensor Networks (WSNs)
   Farrukh Shahzad
Z-MAC: Performance Evaluation and Enhancements
   Shoieb Arshad, Azzat Al-Sadi, Abdulaziz Barnawi
   Tariq AL-Kadi, Ziyad AL-Tuwaijri, Abdullah AL-Omran

Lunch 12:00 - 13:30
Room: Brock room

Technical Sessions 13:30 - 15:00

EUSPN Session 5: Multi-agent Systems and Intelligent Computing
Session Chair: Elhadi Shakshuki, Acadia University, Canada
Room: Canadian A

Modeling and Simulation Agent-Based of Natural Disaster Complex Systems
   Karam Mustapha, Hamid Mcheick and Sehl Mellouli
A Higher-Order Agent Model for Ambient Systems
   Ahmed Chawki Chaouche, Amal El Fallah Seghrouchni, Jean-Michel llié and Djamel Eddine Saidouni
A Negotiation Protocol for Meeting Scheduling Agent
   Mozammal Hossain and Elhadi Shakshuki
Electroencephalograms for Ubiquitous Robotic Systems
   David Swords, Anara Sandygulova, Sameh Abdalla, Gregory M.P. O'Hare
**SsS: Session 1**  
**Session Chair:** Haroon Malik, Queen’s University, Canada  
**Room:** Canadian B  
Hardware Design and Software Simulation for Four Classical Cryptosystems  
  *Qasem Abu Al-Haija, Hanan Al-Mubarak and Abdulla Al-Humam*  
An 8-Bit Scientific Calculator Based Intel 8086 Virtual Machine Emulator  
  *Qasem Abu Al-Haija, Saleh Al-Abdulatif and Mohaned Al-Ghofaily*  
An Engineering Design of 4-Bit Special Purpose Microprogrammed Processor  
  *Qasem Abu Al-Haija, Hasan Al-Amri, Mohamed Al-Nashri, and Sultan Al-Muhaisen*  
Case Study: Monitoring of AIR quality in King Faisal University using a microcontroller and WSN  
  *Qasem Abu Al-Haija, Hasan Al-Qadeeb and Abdulmohsen Al-Lwaimi*  
Arduino Wi-Fi network analyzer  
  *Tariq AL-Kadi, Ziyad AL-Tuwaijri, Abdullah AL-Omran*  

**ComSense Workshop: Session 1**  
**Session Chair:** Zahoor Khan, Dalhousie University, Canada  
**Room:** King George  
Enhancing Collection Tree Protocol for Mobile Wireless Sensor Networks  
  *Dixit Sharma, Ramiro Liscano and Shahram Shah Heydari*  
Feasibility Study of Direct Communication in Wireless Sensor Networks  
  *Ittipong Khemapech*  
Detecting Primary User Emulation Attacks in Cognitive Radio Networks via Physical Layer Network Coding  
  *Xiongwei Xie, Weichao Wang*  
The Effects of Interference on Video Quality over Wireless Sensor Networks  
  *Houda Zeghilet, Yacine Baziz, Moufida Maimour, Bouabdellah Kechar, Nadjib Badache*  

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**Coffee Break**  
**15:00 - 15:30**  
Room: Brock room  

**Technical Sessions**  
**15:30 - 17:00**  

**EUSPN Session 6:** Pervasive/Ubiquitous Ad hoc, Mesh and Sensor Networks  
**Session Chair:** Ali Elkateeb, University of Michigan, USA  
**Room:** Canadian A  
RH-mote for Next-generation Wireless Sensor Networks  
  *Ali Elkateeb*  
Integrated development environment for debugging policy-based applications in wireless sensor networks  
  *Nidal Qwasmi, Daniel Smullen and Ramiro Liscano*  
Redundancy and criticality based scheduling in Wireless Video Sensor Networks for monitoring critical areas  
  *Ali Benzerbadj and Bouabdellah Kechar*  

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**EUSPN Session 7**: Ubiquitous Security and Privacy  
**Session Chair**: Francesco Piccialli, University of Naples, Italy  
**Room**: Canadian B

MobileCA: Accumulative Secure Group Association with Certification Path  
*Oyuntungalag Chagnaadorj and Jiro Tanaka*

Stack Memory Buffer Overflow Protection Based on Duplication and Randomization  
*Sahel Alouneh, Mazen Kharbutli and Rana Alqurem*

Correct by construction security approach to design fault tolerant smart homes for disabled people  
*Sébastien Guillet, Bruno Bouchard and Abdenour Bouzouane*

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**ComSense Workshop: Session 2**  
**Session Chair**: Zahoor Khan, Dalhousie University, Canada  
**Room**: King George

Smart, autonomous and reliable Internet of Things  
*Dimosthenis Kyriazis, Theodora Varvarigou*

AID: An Energy Efficient Decoding Scheme for LDPC Codes in Wireless Body Area Sensor Networks  
*N. Javaid, O. Rehman, N. Alrajeh, Z. A. Khan, B. Manzoor, S. Ahmed*

A trust-based probabilistic coverage algorithm for wireless sensor  
*Zahra Taghikhaki, Nirvana Meratnia, Paul J.M. Havinga*

Methods For Using Intrusion Logs To Establish Criminal Evidence Against Intruders  
*Nehinbe Joshua ojo, Nehibe Johnson lge*

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**Banquet and Award Ceremony**  
19:30-22:00

**Room**: Niagara Room
### Technical Sessions 08:30 - 10:00

**EUSPN Session 8**: Pervasive Algorithms, Protocols and Networks  
**Session Chair**: Elhadi Shakshuki, Acadia University, Canada  
**Room**: Canadian A

- Regenerating Code based Secure Distributed Storage for Wireless Sensor Networks  
  *Jun Wu, Mianxiong Dong, Kaoru Ota and Zhenyu Zhou*
- A Reliable A-MSDU Frame Aggregation Scheme in 802.11n Wireless Networks  
  *Anwar Saif and Mohamed Othman*
- An Enhanced Energy Saving Approach for WSNs  
  *Tarek Sheltami*
- A distributed compressive sensing technique for data gathering in wireless Sensor Networks  
  *Alireza Masouma, Nirvana Meratnia, Paul J.M. Havinga*

### Coffee Break 10:00 - 10:30

**Room**: Brock room

### Technical Sessions 10:30 - 12:00

**EUSPN Session 9**: Ubiquitous Static & Mobile Systems and Social Computing  
**Session Chair**: Ridha Khedri, McMaster University, Canada  
**Room**: Canadian A

- Centralized Management of Scalable Cyber Foraging Systems  
  *Manjinder Paul Singh Nir and Ashraf Matrawy*
- Improving Adaptation rules Quality Using Genetic Programming  
  *Makram Soui, Marouane Kessentini, Asma Abdelbaki and Khaled Ghedira*
- Design of a Social Collaboration and Precise Localization Services for the Blind and Visually Impaired  
  *Mohammed Elbes, Ala Al-Fuqaha*

### END of Event