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His Royal Highness Prince El Hassan bin Talal



**Al-Zaytoonah University of Jordan**

Faculty of Science and Information Technology

**ICIT 2013**

The 6<sup>th</sup> International Conference on Information Technology

**Cloud Computing**

May 8<sup>th</sup> - 10<sup>th</sup>, 2013 Amman, Jordan



**ICIT**  
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**Conference Program**



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## **Preface – Conference Chair**

### **ICIT 2013 the 6<sup>th</sup> International Conference on Information Technology**

**Al-Dahoud Ali**

**General Chair, Dean of IT Faculty, SMIEEE, ACM**

**Aldahoud@zuj.edu.jo**



Welcome to ICIT 2013; the 6<sup>th</sup> International Conference on Information Technology. ICIT 2013 has attracted high quality papers in different fields of IT. It offers a unique opportunity for Arab Scientists and practitioners to meet and get in touch with distinguished international scientists to share their expertise, research results and achievements. During the last decade, Jordan has made IT fundamental to its development. This conference is aimed to promote this technology nationally and internationally.

This year we get technically sponsored by IEEE, IET, ACM, Ulrich, and Google scholar. We received 342 papers from 37 countries, 122 of which were accepted with an acceptance rate of 35%. 5 keynote speakers and 2 workshops will be presented in the conference this year. Orhan Gemikonakli (Head of Department - Computer Communications Department, Middlesex University) , Francesco Sicurello (President of International Institute of TeleMedicine; Professor of Medical Informatics, University Bicocca of Milan), T.R. Gopalakrishnan Nair ( ARAMCO International Endowed Chair in Technology, in PM University, KSA , Mohammad S. Obaidat (IEEE Fellow and SCS Fellows, Monmouth University, NJ, USA, Abd El Badee Salem (Head of BioMedical Informatics and Knowledge Engineering Research Lab, Ain Shams University, and Fuad A. Kittaneh, University of Jordan, I am also appreciated for workshops organizers: Sheik Ali Alao ePromaG Consultancy London, UK): e-Commerce-Health, m-Commerce & Cyber Utopia.

Many individuals have contributed to the success of this international conference. The authors who contribute to this event are highly appreciated, reviewers and conference committees. We also appreciate the support and efforts of all members of the international program committee for their help in reviewing papers. We would like to thank the Editors of the Journals that support the conference for agreeing to consider publishing extended versions of the best accepted papers in special or regular issues of their journals. All the credit goes to the staff of our IT faculty and Computer Center Stuff, especially, Dr Khalid Jaber, Hani Mimi, Eman Abu Maria, Heba Nasri, and all my colleagues; they have helped a lot in many tasks related to the conference. The conference would not have seen the light without the encouragement and full support from our president Prof. Rushdi A. Hasan and board of owners.

Finally, on behalf of all committees of the ICIT 2013, I wish you a full enjoyment of the technical and social.

**Tuesday May 7<sup>th</sup> , 2013**  
**19:00-21:00: Registrations: Arena Space Hotel, Amman**

Time	Tuesday May 7 <sup>th</sup> , 2013	Location
11:00 – 2:00	Workshop on E-commerce-Health, M-commerce and Cyber Utopia.	<b>Conference Hall</b> Faculty of IT Building 5
Time	Wednesday May 8 <sup>th</sup> , 2013	Location
8:40 – 9:45	<b>Late Registration, Conference Location: Al-Zaytoonah University</b>	<b>Main Stage</b> Building 1
10:00 – 10:30	<b>Opening Session</b>	
10:30 – 10:55	<b>Coffee Break</b>	
Time	<b>Keynote Speeches</b> Wednesday May 8 <sup>th</sup> , 2013	Location
11:00 – 11:40	Advances in Cloud Computing Architecture and Enterprise Computing. Dr. T.R. Gopalakrishnan Nair <b>Chair:</b> Abdelfattah Tamimi	<b>Main Stage</b> Building 1
11:45 – 12:25	From Smoke Signal to XG and Current Trends in Communications. Prof Dr. Orhan Gemikonakli <b>Chair:</b> Afif Mghawash	
12:30 – 13:10	Trends In E-Health and Telemedicine. Prof Dr. Francesco Sicurello <b>Chair:</b> Sonja Ristic	
13:15 – 13:55	Machine Learning in Cancer Informatics. Prof Dr. Abdel-Badeeh M. Salem <b>Chair:</b> Al-Dahoud Ali	
14:00-15:20	<b>Lunch</b>	<b>Main Restaurant</b>

Time	<b>Session A</b> Wednesday May 8 <sup>th</sup> , 2013 <b>Applied Mathematics</b>	Location
15:30-17:30	<p><b>Cahir:</b> Abdelkareem Farah, Issam Odeh  <b>Keynote Speech:</b> Numerical Radius Inequalities for Hilbert Space Operators.  Prof Dr. Fuad A. Kittaneh</p> <ol style="list-style-type: none"> <li>1. Generating Goppa Codes, Thomas Risse.</li> <li>2. New Upper and Lower Bounds for Laplacian Eigenvalues of Graphs, Amal Al-Saket.</li> <li>3. Combine Laplace Transform and Variational Iteration Method to Solve Convolution Differential Equations, Tarig. M. Elzaki &amp; Mahmud M.Sh. Amrir.</li> <li>4. Neural Networks and Vector Autoregressive Model in Forecasting Yield Curve, Zdravka Aljinović, Tea Poklepović.</li> <li>5. Index Number Mathematics Application to the Gross Domestic Product Decomposition, Elza Jurun, Ivan Šutalo.</li> <li>6. Binomial and Trinomial Trees Versus Bjerk Sund and Stensland Approximations for American Options Pricing, Branka Marasovic.</li> </ol>	Lab <b>5013</b> Faculty of IT Building 5
Time	<b>Session B</b> Wednesday May 8 <sup>th</sup> , 2013 <b>Multimedia and Its Applications</b>	Location
15:30-17:30	<p><b>Chair:</b> Sukayna Qatawneh</p> <ol style="list-style-type: none"> <li>1. Iris Segmentation Using Statistical Measurements for the Intensity Values of the Eye Image, Safaa S. Omran, Maryam A. Salih.</li> <li>2. On Behavior Analysis in Video Surveillance, Ahmed Taha<sup>1</sup>, Hala H. Zayed, M. E. Khalifa and El-Sayed M. El-Horbaty.</li> <li>3. Using Unstructured Behavior Tracking to Estimate Quality of Architecture Design Based On Video Track, Abdul Monem S. Rahma<sup>1</sup>, Abeer Salim Jamil.</li> <li>4. A New Intelligent Telemedicine System Based on Service-Oriented Architecture for Cancer Image Diagnosis, Bassant Mohamed Elbagoury, El-Sayed M. El-Sayed El-Horbaty, and Abdel-Badeeh M.Salem.</li> <li>5. Image Compression Technique by Reversible Clustering Segmentation, Tareq Mohammed Salman, Nashaat Jaisam Al-Anber.</li> <li>6. Video Classification and Retrieval Using Arabic Closed Caption, A.Anwar, Gouda Ismail Salama, and M.B. Abdelhalim.</li> </ol>	Lab <b>5011</b> Faculty of IT Building 5

Time	<b>Session C</b> Wednesday May 8 <sup>th</sup> , 2013 <b>Computer Networks and Communications</b> <b>Cloud Computing</b>	Location
15:30-17:30	<b>Chair:</b> Shadi Al-Zoubi <ol style="list-style-type: none"> <li>1. Human Resource Information System and Electronic Recruitment as Internal and External Managerial Tools in Creation of Companies' Success, Ivana Tadić, and Snježana Pivac.</li> <li>2. Supporting the Interethnic Relations and Conflict Resolution Trough Networking (Georgian Case), Ketevan Gochitashvili, Malkhaz Shurgulaia, Mariam Manjgaladze.</li> <li>3. Methodology Trends and Role of Leaders in Information and Communication Technology Projects – Experiences of Using Agile Processes, Snježana Pivac, Nikša Pivac, Ivana Tadić.</li> <li>4. QOS in Genetic Algorithm Derived Fuzzy Based Ad-Hoc Network, Mercy Sharon Devadas.</li> <li>5. Mobile Cloud Computing: Current Development and Research Challenges, Sanae Esseradi, Hassan Badir, Abderrahmane Sbihi &amp; Amjad Rattrout.</li> <li>6. E-Government: Benefits, Risks and a Proposal to Assessment Including Cloud Computing and Critical Infrastructure, Mónica Marlene Baquerizo Anastacio, José Antonio Rubio Blanco, Luis Javier García Villalba, Ali Al-Dahoud.</li> <li>7. Different Perspectives of Web Site Performance Analysis from Croatian Hotels, Tea Poklepović, Josip Arnerić, Nataša Erjavec.</li> </ol>	Lab <b>5006</b> Faculty of IT Building 5
17:30-17:45	<b>Coffee Break</b>	
Time	<b>Session A</b> Wednesday May 8 <sup>th</sup> , 2013 <b>Information and Knowledge Engineering</b>	Location
17:45-19:45	<b>Chair:</b> Udo Richard Averweg, Mohammed Naji Al-Kabi <ol style="list-style-type: none"> <li>1. Information Technology Acceptance in South Africa: A Comparative Study Analysis of the Perceived Usefulness And Perceived Ease of Use Constructs, Udo Richard Averweg.</li> <li>2. Triangular Ecology of Academia, Enterprises and Pros for IT &amp; High-Tec Innovations, Muhammad Fiaz, Yang Naiding, Xi'an, China.</li> <li>3. Similarity Network for Semantic Web Services Substitution, Chantal Cherifi.</li> <li>4. Canonical Correlation Analysis of the Effect of Perceived Service Quality on the Relationship Quality at the Business-to-Business Market, Mario Pepur.</li> <li>5. Are the Banks Informatic Open for Knowledge Improvement? Ana Rimac Smiljanić, Domagoja Buljan Barbača, Damir Baran.</li> <li>6. Business Intelligent and Supply Chain Management, Ante Rozga, Neven Šerić , Ante Luetić</li> </ol>	Conference <b>Hall</b> Faculty of IT Building 5

Time	<b>Session B</b> Wednesday May 8 <sup>th</sup> , 2013 <b>Multimedia and Its Applications</b>	Location
17:45-19:45	<b>Chair:</b> Abdel Badee Salim, Rakesh Singhai <ol style="list-style-type: none"> <li>1. Smart Water Distribution System, Jan Nikodem, Ryszard Klempous.</li> <li>2. Image Processing Development and Implementation: A Software Simulation Using Matlab®, Thabit Sultan Mohammed, Wisam F. Al-Azzo, and Khalid Mohammed Al Mashani.</li> <li>3. Image Singularity Detection Using Multiscale Transforms, Rakesh Singhai, Anil A. Patil, Jyoti Singhai.</li> <li>4. Large Scale Linear Coding for Image Classification, Mustafa Ibrahim, Mohamed Waleed Fakhr and Mustafa Abdel Aziem.</li> <li>5. Evaluation of Factors Affecting Broadband Internet Access Using Regression Analysis, Vlasta Bahovec, Ksenija Dumičić, Mirjana Čižmešija.</li> <li>6. Client-Server Adaptive Model for Using Multimedia in Science Education at Universities, Asma H Sbeih, Haitham W Hijazi</li> </ol>	Lab <b>5011</b> Faculty of IT Building 5
Time	<b>Session C</b> Wednesday May 8 <sup>th</sup> , 2013 <b>Computer Networks and Communications</b>	Location
17:45-19:45	<b>Chair:</b> Thamer Rawashdeh <ol style="list-style-type: none"> <li>1. Energy Efficient Distributed Multi-Parent Routing for Wireless Sensor Networks, Praveen Kaushik, Jyoti Singhai.</li> <li>2. An Ant-Based Adaptive Distributed Routing Protocol for Mobile Ad Hoc Networks, Delfín Rupérez Cañas, Ana Lucila Sandoval Orozco, Luis Javier García Villalba.</li> <li>3. Location as a Unique Identifier for Wi-Fi Access , Anthony Ijeh and Jean Gabrielle Maurice.</li> <li>4. Simulation of an Event-Driven Wireless Sensor Network Protocol for Environmental Monitoring, Maher Ali Al Rantisi, Ali Maqousi, Glenfordmapp, Orhangemikonakli.</li> <li>5. Some Heuristics for Solving Production Planning Problem with Sequence Dependent Setup Times, Zrinka Lukač</li> </ol>	Lab <b>5006</b> Faculty of IT Building 5
Time	<b>Session D</b> Wednesday May 8 <sup>th</sup> , 2013 <b>Software Engineering</b>	Location
17:45-19:45	<b>Chair:</b> Mohammed Lafi, Ahmad Althunaibat <ol style="list-style-type: none"> <li>1. Predicting the Cost Estimation of Software Projects Using Case-Based Reasoning, Hassan Y. A. Abu Tair.</li> <li>2. Gene Classification: A Review, Shadi Aljawarneh, Bassam Shargabi, Hasan Rashaideh.</li> <li>3. Automatic Test Cases Generation from UML Activity Diagrams Using Graph Transformation, Abdelkame Hettab, Allaoua Chaoui1, and Ali Aldahoud.</li> </ol>	Lab <b>5009</b> Faculty of IT Building 5

	4. An EMF Ecore Based Relational DB Schema Meta-Model, Sonja Ristić, Slavica Aleksić, Milan Čeliković, Ivan Luković.	
<b>20:00-22:00</b>	<b>Dinner</b>	<b>Main Restaurant</b>
<b>Time</b>	<b>Thursday May 9<sup>th</sup> , 2013</b>	<b>Location</b>
<b>9:00-9:40</b>	<b>Keynote Speech:</b> New Trends and Challenges in Green ICT. Prof Dr. Mohammad S. Obaidat <b>Chair:</b> Issa Ottoum	<b>Conference Hall</b> Faculty of IT Building 5
<b>Time</b>	<b>Session A</b> Thursday May 9 <sup>th</sup> , 2013 <b>Parallel and Distributed Systems</b> <b>Grid Computing and Applications</b>	<b>Location</b>
<b>9:45-11:45</b>	<b>Chair:</b> Izzat Alsmadi <ul style="list-style-type: none"> <li>1. Slot Selection and Co-Allocation Algorithms for Economic Scheduling in Distributed Computing, Victor Toporkov, Dmitry Yemelyanov, Anna Toporkova, Alexey Tselishchev.</li> <li>2. Cognitive Load Measurement for Visualizations in Learning Computer Programming Using EEG (Electroencealography), Muhammed Yousoof, Mohd Sapiyan.</li> <li>3. Best Practices for Creating Websites Optimized for Mobile Devices, Paweł Krawczyk, Marek Woda.</li> <li>4. In-Place Recursive Approach for All-Pairs Shortest Paths Problem Using Opencl, Manish Pandey, Himanshu Pandey , Sanjay Sharma.</li> <li>5. Grid Computing for Solving the Optimal Winner Determination Problem, Dalila Boughaci, Louiza Slaouti And Kahina Achour.</li> </ul>	<b>Conference Hall</b> Faculty of IT Building 5
<b>Time</b>	<b>Session B</b> Thursday May 9 <sup>th</sup> , 2013 <b>Computers and Networks Security</b>	<b>Location</b>
<b>9:45-11:45</b>	<b>Chair:</b> Luis Javier García Villalba, Ayman Al-Tamimi <ul style="list-style-type: none"> <li>1. Using Genetic Algorithms to Break a Simple Transposition Cipher, A. S. Al-Khalid, S. S. Omran, Dalal. A. Hammood.</li> <li>2. Efficient Undeniable Threshold Proxy Signature Schem, Sattar J Aboud and Sufian Yousef.</li> <li>3. Comparison Study between Classic-LSB, SLSB and DSLSB Image Steganography, Mohammed Abbas Fadhil Al-Husainy.</li> <li>4. Methods to Test Web Application Scanners, Fernando Román Muñoz, Luis Javier García Villalba.</li> <li>5. Adaptation of Nids against Advanced Evasion Techniques, Jorge Maestre Vidal, Jaime Daniel Mejía Castro, Luis Javier García Villalba.</li> </ul>	<b>Lab 5009</b> Faculty of IT Building 5



Time	<b>Session C</b> Thursday May 9 <sup>th</sup> , 2013 <b>Artificial Intelligence</b>	Location
9:45-11:45	<b>Chair:</b> Osama Musleh <ol style="list-style-type: none"> <li>1. A Modi_Ed Harmony Search for O_CE-Space-Allocation, Mohammed Azmi Al-Betar; Mohammed A. Awadallah, Ahamad Tajudin.</li> <li>2. An Application of Fuzzy Sets to Scientific Thinking, Michael Gr. Voskoglou.</li> <li>3. Bulk Carrier Market Prediction Using Artificial Neural Network, Taymoor Nazmy, Mohammed Rizk Awad, Ismael Amr Ismael.</li> <li>4. Robust Features and Paper Currency Recognition System, Allah Bux, Muhammad Sarfraz, Nuhmanul Haq.</li> </ol>	Lab <b>5006</b> Faculty of IT Building 5
Time	<b>Session D</b> Thursday May 9 <sup>th</sup> , 2013 <b>Modeling and Simulations Internet and Web Services</b>	Location
9:45-11:45	<b>Chair:</b> Mohammad Muhairat <ol style="list-style-type: none"> <li>1. Interactive Four-Bar Linkage 3D-Simulation Using Augmented Reality, Waleed Maqableh, Manjit Sidhu.</li> <li>2. On Prioritizing, Target Selection and Synchronization in Multitarget Swarming Simulators, Radomir Jankovic, Maja Jankovic.</li> <li>3. Hardware Modelling of a 32-Bit, Single Cycle RISC Processor Using VHDL Safaa S. Omran, Hadeel S. Mahmood.</li> <li>4. Evaluation of Impact of Web Spam Behavior on Arabic Websites Popularity, Heider A. Wahsheh, Izzat M. Alsmadi, Mohammed Naji Al-Kabi.</li> </ol>	Lab <b>5011</b> Faculty of IT Building 5
11:45-12:00	<b>Coffee Break</b>	
Time	<b>Session A</b> Thursday May 9 <sup>th</sup> , 2013 <b>E-Technology</b>	Location
12:00-13:30	<b>Chair:</b> Emad A. Abu-Shanab <ol style="list-style-type: none"> <li>1. E-Government Acceptance Factors: Trust &amp; Risk, Rawan T. Khasawneh, Wafa'a A. Rabayah, and Emad A. Abu-Shanab.</li> <li>2. E-Government Adoption: A Digital Divide Perceptual View, Emad Abu-Shanab, and Rawan Khasawneh.</li> <li>3. E-Participation Levels and Technologies, Raya Al-Dalou', Emad Abu-Shanab.</li> <li>4. Students' Viewpoints and Facing Problems toward the Use of Interactive Whiteboards, Tufan Aytaç.</li> </ol>	<b>Conference Hall</b> Faculty of IT Building 5



	<ol style="list-style-type: none"> <li>Applying Collaborative Tagging And Semantic Web Technologies for Providing Recommendation in Programming Tutoring System , Boban Vesin, Aleksandra Klačnja-Milićević, Mirjana Ivanović, Zoran Budimac.</li> <li>The Effect of Using E-Learning Curriculum and Traditional Classroom Curriculum: Comparison &amp; Merits, Nadia Al-Taie.</li> </ol>	
<b>Time</b>	<b>Session B</b> Thursday May 9 <sup>th</sup> , 2013 <b>Computers and Networks Security</b>	<b>Location</b>
<b>12:00-13:30</b>	<b>Chair:</b> Khalid Jaber <ol style="list-style-type: none"> <li>Techniques for Source Camera Identification, Ana Lucila Sandoval Orozco, Jocelin Rosales Corripio, David Manuel Arenas González, Luis Javier García Villalba, Julio César Hernández Castro.</li> <li>Evolution of Nids to Adapt to New Approach of Intrusion Mechanisms, Jaime Daniel Mejía Castro, Jorge Maestre Vidal, Luis Javier García Villalba.</li> <li>Contextual Adaptation of a Security Framework, Anthony Ijeh, Ahmad Al Dahoud and Babatunde Ali Alao.</li> <li>Optimization of Davidson Model Based on Recent RF Measurement Conducted in UHF/VHF Bands in Kwara State, Nigeria, Nasir Faruk, Yunusa. A. Adediran, Adeseko A. Ayeni.</li> </ol>	<b>Lab 5011</b> Faculty of IT Building 5
<b>Time</b>	<b>Session C</b> Thursday May 9 <sup>th</sup> , 2013 <b>Artificial Intelligence</b>	<b>Location</b>
<b>12:00-13:30</b>	<b>Chair:</b> Okba Kazar <ol style="list-style-type: none"> <li>Hybrid Genetic Agent Approach and TABU Search for Optimizing On-The-Fly Web Map Generalization, Brahim Lejdel, Okba Kazar.</li> <li>Comparing Agent–Oriented Programming versus Object-Oriented Programming, Rula K.Al-Azawi.</li> <li>The Framework for Diagnosis Oral Cancer Primary Tumor Stage Using Bayesian Reasoning , Zainab Abu Bakara, Fatihah Mohdb, Noor Maizura Mohamad Noorb, and Zainul Ahmad Rajionc.</li> </ol>	<b>Lab 5009</b> Faculty of IT Building 5

Time	Session D Thursday May 9 <sup>th</sup> , 2013 Database And Data Mining	Location
12:00-13:30	<b>Chair:</b> Ossyka Alexandre Fedorovich <div><div>1. Modern Temporal Data Models: Properties and Deficiencies, Dušan Petković.</div><div>2. Integrating Social Network Analysis and Data Mining Techniques into Effective E-Market Framework, Sukhpreet Dhaliwal, Hikmat Jahangirli, Riad Aljomai, Wadhah Almansoori, Reda Alhajj.</div><div>3. Document Clustering Using Bees Algorithm, Nihal M. Ali, M. B. Abdelhalim, and M. Waleed Fakhr.</div><div>4. CBIR System Based on Integration between Surf and Global Features, M. H. Saad, H. I. Saleh, H. Konbor, M. Ashour.</div></div>	Lab <b>5006</b> Faculty of IT Building 5
Closing Session 13:30-14:20 - Conference Hall- Faculty of IT- Building 5		
14:30-15:30	Lunch	Main Restaurant
20:00-22:00	<b>Dinner:</b> Dead Sea or Jerash Old City Departure From The Hotel at 7:00 PM	
Friday May 10 <sup>th</sup> , 2013 Free Time ( Suggestion: Trip to Petra and Wadi Rum )		

**Al-Zaytoonah University of Jordan** was established in 1993 after receiving its license and general accreditation by Decision No. 848 on March 6, 1993 from the ministry of Higher Education and Scientific Research. Teaching began on September 6, 1993, and since then; Al-Zaytoonah has witnessed considerable progress, at both the infrastructure and academic levels. It now includes seven faculties, encompassing 25 undergraduate specializations and four graduate programs: MBA, Computer Science, Pharmacy, and Accounting.



**Al-Zaytoonah** is now a member of the following associations:

- Federation of Arab Universities
- Union of Arab & European Universities
- International Association of University (IAU)
- Federation of the Universities of the Islamic World (FUIW)
- Association of Private Institutions for Higher Education



**Al-Zaytoonah** campus is distinguished by a wonderful site overlooking Queen Alia International Airport Highway, and is characterized by beautiful architectural features. It is only 15 km south of the center of Amman, the capital of Jordan, and its premises stretch over a total area of approximately 220,000 sq. m

**The Faculty of Science and Information Technology** was established in 1993. It offers the Bachelor of Science degree in the following specializations:

- Mathematics and Natural Science
- Computer Science
- Computer Information Systems
- Software Engineering
- Computer Networks
- Multimedia Systems



The 6<sup>th</sup> International Conference is a clear evidence of how far the Faculty of Science and Information Technology has come in organizing conferences with high quality research discussing advanced topics in the diverse areas of Information Technology and its applications.

The 6<sup>th</sup> conference reflects the high standards and the advanced level the Faculty of Science and Information Technology has reached with the support of Alzaytoonah University of Jordan.