

# **2011 International Conference on Innovations in Information Technology**

**(IIT 2011)**

**Abu Dhabi, United Arab Emirates  
25-27 April 2011**



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# Program

## Monday, April 25

Registration

Light Breakfast

Student Poster

Opening Ceremony

**Keynote:: The Internet: Past, Present, and Future**

Prof. Mostafa Ammar, Georgia Institute of Technology, USA

Coffee Break

**Keynote:: From Crowdsourcing to Crowdservicing**

Professor Joseph G. Davis, School of Information Technologies, University of Sydney

Lunch

**Tutorial I: Software engineering of video Games**

Prof. Boumediene Belkhouche, Faculty of Information Technology, UAE University

**Tutorial II: Cyber Security and Trust: Cooperative Autonomous Resilient Defenses (CARD)**

Dr. Mohamed Eltoweissy, Pacific Northwest National Laboratory, USA

Student Poster

Trip

## Tuesday, April 26

Registration

Light Breakfast

**Tutorial III: Security in Intelligent Transportation Systems**

Prof. Abderrahim Benslimane, University of Avignon, France

**D2-S1: Network-1**

***Successive Iterative Decoding of Reed Solomon Codes Using Cryptographic Hash Codes as Parity***

Obaidur Rehman (University of Siegen, Germany); Natasa Zivic (University of Siegen, Germany)  
pp. 1-6

***Efficient Use of Partially Overlapped Channels in 2.4 GHz WLAN Backhaul Links***

Shazia Abbasi (University of Sindh, Pakistan); Quratulain Kalhoro (University of Surrey, United Kingdom); Masood Kalhoro (Technotronix, Pakistan)  
pp. 7-11

***On the Generation of Correlated Rayleigh Fading Envelopes for Multi-Antenna Systems***

Walid Al-Hussaibi (University of Sussex, United Kingdom); Falah H. Ali (University of Sussex, United Kingdom)

pp. 12-17

***Novel Pseudorandom Phase Generation in Transform Domain Communication Systems***

Haixin Sun (Jilin University, P.R. China); Guoan Bi (Nanyang Technological University, Singapore); Yong Liang Guan (Nanyang Technological University, Singapore); Yaowu Shi (Jilin University, P.R. China)

pp. 18-22

***Non-Uniform Signal Constellation for Iteratively Decoded Bit Interleaved Coded Modulation (BICM-ID) with Convolution and LDPC Codes***

Tarek Arafa (University of Kaiserslautern, Germany); Wolfgang Sauer-Greff (University of Kaiserslautern, Germany); Ralf Urbansky (University of Kaiserslautern, Germany)

pp. 23-28

***The Unequal Protection of Network Coding with Multi-generation Mixing***

Mohammed D Halloush (Yarmouk University, Jordan); Hayder Radha (Michigan State University, USA)

pp. 29-34

**D2-S2: Web-1**

***Towards a Cloud-based Framework for Context Management***

Elarbi Badidi (UAE University, UAE); Ikbal Taleb (UAE University, UAE)

pp. 35-40

***Distributing Resource Intensive Mobile Web Services***

Feda AlShahwan (University, United Kingdom); Francois Carrez (University of Surrey, United Kingdom); Klaus Moessener (University, United Kingdom)

pp. 41-46

***Integration of Web Service Interfaces Via Decision Tree***

Jakub Stárka (Charles University, Czech Republic); Irena Mlýnková (Charles University, Prague, Czech Republic); Jakub Klírmek (Charles University, Prague, Czech Republic); Martin Nečský (Charles University, Prague, Czech Republic)

pp. 47-52

***A Fault Tolerant Architecture for Web Services***

Sareh Aghaei (University of Isfahan, Iran); MohamadReza KhayyamBashi (, Iran); Mohammad Ali Nematbakhsh (University of Isfahan, Iran)

pp. 53-56

***A Context Aware Approach to Semantic Query Expansion***

Najmeh Ahmadian (Islamic Azad University-Dehaghan Branch, Iran); Mohammad Ali Nematbakhsh (University of Isfahan, Iran); Hamed Vahdat-Nejad (University of Isfahan, Iran)

pp. 57-60

***Supervision and Control Tool for E-learning Virtual Laboratory***

Djamila Mechta (Université Ferhat Abbas de Sétif, Algeria); Mahieddine Djoudi (University of Poitiers, France); Saad Harous (UAE University, UAE); Amel Douar (Université Ferhat Abbas de Sétif, Algeria); Raouf Belmahdi (Université Ferhat Abbas de Sétif, Algeria)

pp. 61-66

**Coffee Break**

**Keynote:: Innovative Services for a Smarter Planet**

Dr. David L. Cohn, Program Director, Smarter Cloud, IBM T. J. Watson Research Center, Yorktown Heights, New York

## D2-S3: (Arabic Language Processing)

### ***What is a Modern Arabic Dictionary?***

Boumediene Belkhouche (UAE University, UAE); Harmain Harmain (United Arab Emirates University, UAE); Huda Al Taha (UAE University, UAE); Latifa Al Najjar (UAE University, UAE)  
pp. 67-70

### ***Enhancement Tools for Arabic Web Search a Statistical Approach***

Adnan Yahya (Birzeit University, Palestine); Ali Salhi (Birzeit University, Palestine)  
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### ***GENESTEM: a Novel Approach for an Arabic Stemmer Using Genetic Algorithms***

Anas Y Boubas (UAE University, UAE); Leena Lulu (UAU, UAE); Boumediene Belkhouche (UAE University, UAE); Saad Harous (UAE University, UAE)  
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### ***An Interactive Arabic Dictionary***

Ghaida Rebdawi (HIAST, Syria); Nada Ghneim (Researcher, Syria); Said Desouki (Higher Institute of Applied Sciences and Technology, Syria); Riad Sonbol (Engineer, Syria)  
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### ***Extracting Person Names From Arabic Newspapers***

Ali Elsebai (Al-Imam Muhammad Ibn Saud University, Saudi Arabia); Farid Meziane (University of Salford, United Kingdom)  
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## D2-S4: (Smart Grid)

### ***Smart Home Gateway for Smart Grid***

Abdul-Rahman Al-Ali (American University of Sharjah, UAE); Ayman El-Hag (American University of Sharjah, UAE); Rached Dhaouad (American University of Sharjah, UAE)  
pp. 90-93

### ***A Multilayer Control Framework for Distribution Systems with High DG Penetration***

Hany Farag (University of Waterloo, Canada); Ehab El-Saadany (Waterloo University, Canada); Lana R El Chaar (Petroleum Institute, UAE)  
pp. 94-99

### ***A Cooperative Agent-Based Architecture for Self-Healing Distributed Power Systems***

Aboelsood Zidan (University of Waterloo, Canada); Ehab El-Saadany (Waterloo University, Canada); Lana R El Chaar (Petroleum Institute, UAE)  
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### ***IT Integration in Power Distribution Substation, AADC Substations' Automation and Management***

Khalid W. Darwish (Al Ain Distribution Company, UAE)  
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## D2-S6: (Video Techniques)

### ***A New Approach to Emotion Recognition***

Dammak Majdi (REGIM: REsearch Group on Intelligent Machines, University of Sfax, Tunisia)  
pp. 110-113

### ***Graph Modeling Based Video Event Detection***

Najib Ben Aoun (REGIM: REsearch Group on Intelligent Machines, Tunisia); Haytham Elghazel (GAMA Laboratory, France); Chokri Ben Amar (University of Sfax, National School of Engineers, Tunisia)  
pp. 114-117

***Hierarchical Categorization Tree Based on a Combined Unsupervised-Supervised Classification***

Mahmoud Mejdoub (I3S Sophia ANTIPOLIS, France); Chokri Ben Amar (University of Sfax, National School of Engineers, Tunisia)  
pp. 118-123

***Characterization of Ancient Document Images Composed by Arabic and Latin Scripts***

Nizar Zaghdien (REGIM/L3i, Tunisia); Rémy Mullot (L3i, France); Adel M. Alimi (University of Sfax, National Engineering School of Sfax, Tunisia)  
pp. 124-127

***Incremental Learning Approach for Human Detection and Tracking***

Boudour Ammar (University of Sfax, Tunisia); Wali Ali (University of Sfax, Tunisia); Adel M. Alimi (University of Sfax, National Engineering School of Sfax, Tunisia)  
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**D2-S5: (E-Health)**

***e-HTAM: a Technology Acceptance Model for Electronic Health***

Abdul Hakim H. M. Mohamed (Liverpool Hope University, United Kingdom); Hissam Tawfik (Liverpool Hope University, United Kingdom); Dhiya Al-Jumeily (Liverpool John Moores University, United Kingdom)  
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***Evaluation in Health Technology Projects***

Farath Arshad (Liverpool John Moores University, United Kingdom)  
pp. 139-144

***Using E-Learning for Helping Children with Diabetes***

Mona Al-Mansoori (British University in Dubai, UAE); Khaled F. Shaalan (The British University in Dubai (BUiD), UAE); Hissam Tawfik (Liverpool Hope University, United Kingdom)  
pp. 145-149

***Cross-Boundary Knowledge-based Decision Support in e-Health***

Obinna Anya (Liverpool Hope University, United Kingdom); Hissam Tawfik (Liverpool Hope University, United Kingdom); Atulya K Nagar (Liverpool Hope University, United Kingdom)  
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**Lunch**

**Keynote:: Computational epidemiology: a new paradigm in the fight against infectious diseases**

Prof. Vittoria Colizza, ISI Foundation, Turin, Italy

**Coffee Break**

**Tutorial IV: The Evolved Packet System**

Dr. Tarik Taleb, NEC Europe Ltd.

**D2-S8: Network-2**

***Impact of Transmission-related Parameters on the Energy Performance of Cluster-based Routing Protocols for Wireless Sensor Networks***

Ahmed Badi (Florida Atlantic University, USA); Imad Mahgoub (Florida Atlantic University, USA); Fadi Sibai (UAE University, UAE)  
pp. 156-161

***Efficient Flooding Based on Node Position for Mobile Ad Hoc Network***

Sofian Hamad (Brunel University, United Kingdom); Hadi Nouredine (Brunel University, United Kingdom); Nazar Radhi (Brunel University, United Kingdom); Ibrar Shah (Brunel University London UK, United Kingdom); Hamed Saffa Al-Raweshidy (University of Brunel, United Kingdom)  
pp. 162-166

***An Overview of Localization Techniques for Wireless Sensor Networks***

Ahmed Kulaib (Khalifa University, UAE); Raed Shubair (Khalifa University of Science, Technology and Research, UAE); Mahmoud Al-Qutayri (Khalifa University of Science Technology and Research, UAE); Jason Ng (British Telecom, United Kingdom)  
pp. 167-172

***Experimental Evaluation of Image Compression and Transmission for TinyOS-Based Imote2 Platform***

Moad Y Mowafi (Jordan University of Science and Technology, Jordan); Fahed H Awad (Jordan University of Science and Technology, Jordan); Eyad Taqieddin (Jordan University of Science and Technology, Jordan); Omar Banimelhem (Jordan University of Science and Technology, Jordan)  
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***The Cubes: a Tangible Game-Based Learning System***

Jamshaid Mohebzada (University of Calgary, Canada); Arsalan Bhojani (American University of Sharjah, UAE)  
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***A Survey of Indoor Positioning Systems and Algorithms***

Klaithem Al nuaimi (UAEU, UAE); Hesham Kamel (UAE University, UAE)  
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***A Survey of Wireless Multimedia Sensor Networks Challenges and Solutions***

Maryam Al Nuaimi (United Arab Emirates University, UAE); Farag Sallabi (UAE University, UAE); Khaled Shuaib (United Arab Emirates University, UAE)  
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**D2-S9: Security-1**

***Forensic Analysis of Private Browsing Artifacts***

Huwida Said (Zayed University, UAE); Noora Al Mutawa (Forensic Engineer, UAE); Ibtisam Al Awadhi (Forensic Engineer, UAE); Mario Guimaraes (Kennesaw State University, USA)  
pp. 197-202

***A Survey on Firewall's Early Packet Rejection Techniques***

Zouheir Trabelsi (UAE University, UAE)  
pp. 203-208

***Improved Neural Network-Based Recognition of Irises with Sector and Block Partitioning***

Fadi Sibai (UAE University, UAE)  
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***Revocation in VANETs: a Survey***

Hind Al Falasi (United Arab Emirates University, UAE); Ezedin Barka (UAE University, UAE)  
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***Evaluation of Security Methods for Ensuring the Integrity of Digital Evidence***

Shahzad Saleem (Stockholm University, Sweden); Oliver Popov (Stockholm University, Sweden); Rami Dahman (Stockholm University, Sweden)  
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***Wormhole Attack Detection Protocol Using Hound Packet***

Saurabh Gupta (Indian Institute of Technology Delhi, India)  
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Registration

Light Breakfast

**Tutorial V: Target Surveillance Using Mobile Wireless Sensor Networks: Models, Theories, and Applications**

Dr. Mohamed Hamdi, Communication Networks and Security Research Lab. SUPCOM, University of Carthage, Tunis

**D3-S2: Data Mining-1**

***Incremental Evolution of Collective Network of Binary Classifier for Content-Based Image Classification and Retrieval***

Serkan Kiranyaz (Tampere University of Technology, Finland); Stefan Uhlmann (Tampere University of Technology, Finland); Jenni Pulkkinen (Tampere University of Technology, Finland); Turker Ince (, Turkey); Moncef Gabbouj (Tampere University of Technology, Finland)  
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***A Method for Solving the Cold Start Problem in Recommendation Systems***

Ossama Embarak (Heriot-Watt University, United Kingdom)  
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***Integration of Users Preferences and Semantic Structure to Solve the Cold Start Problem***

Ossama Embarak (Heriot-Watt University, United Kingdom)  
pp. 244-249

***Learning to Sort by Using Evolution***

Igor Trajkovski (Faculty of Electrical Engineering and Information Technologies, Macedonia); Zharko Aleksovski (Philips Research, The Netherlands)  
pp. 250-254

***A Spatial Index Structure Using Dynamic Recursive Space Partitioning***

Amer F Al-Badameh (Jordan University of Science & Technology, Jordan); Abdullah Al-Alaj (Jordan University of Science & Technology, Jordan)  
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***FCM-Fuzzy Rule Base: a New Rule Extraction Mechanism***

Hossein Khosravi R. (Ferdowsi University of Mashhad, Iran); Mohammad Hossien Yaghmaee (Ferdowsi University of Mashhad, Iran); Amirhossein Baradaran Shahroudi (Islamic Azad University, Mashhad Branch, Iran); Hadi Sadoghi Yazdi (Ferdowsi University of Mashhad, Iran)  
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**D3-S1: Web-2**

***Countermeasures Against Consistency Anomalies in Distributed Integrated Databases with Relaxed ACID Properties***

Lars Frank (Copenhagen Business School, Denmark)  
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***A Roadmap for Success in the Clouds***

Nabeel A Al-Qirim (UAE University, UAE)  
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***Qualifying Semantic Graphs Using Model Checking***

Mahdi Gueffaz (Bourgogne, France); Sylvain Rampacek (Bourgogne, France); Christophe Nicolle (University of Burgundy, France)  
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***Applicability of RESTful Web Services in Control Center Software Integrations***

Ervin Varga (University of Novi Sad, Serbia); Imre Lendak (University of Novi Sad, Serbia); Milan Gavrić (Telvent DMS, Serbia); Aleksandar Erdeljan (University of Novi Sad, Serbia)  
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***A Framework for SLA-Based Cloud Services Verification and Composition***

Asma Falasi (UAE University, UAE); Mohamed Adel Serhani (UAE University, UAE)  
pp. 287-292

***A Pilot Study for Evaluating Arabic Websites Using Automated WCAG 2.0 Evaluation Tools***

Hend S. Al-Khalifa (King Saud University, Saudi Arabia)  
pp. 293-296

**Coffee Break**

**Keynote:: Service Computing: Engineering the Service Science**

Prof. Athman Bouguettaya, CSIRO ICT Centre, Canberra, Australia

**Lunch**

**Keynote:: Living in the WAM Continuum: Unified Design and Operation of Wireless and Mobile Networks**

Prof. Mostafa Ammar, Georgia Institute of Technology, USA

**D3-S4: Data Mining-2**

***Searching Data Streams for Variable Length Anomalies***

Amany Abu Safia (University of Sharjah, UAE); Zaher Aghbari (University of Sharjah, UAE)  
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***Decision Tree Discovery for the Diagnosis of Type II Diabetes***

Asma AlJarullah (King Saud University, Saudi Arabia)  
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***Toward Forming an Effective Team Using Social Network***

Kareem Kamel (University of Sharjah, UAE); Zaher Aghbari (University of Sharjah, UAE)  
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***Exploring Web Search Behavior of Arab Internet Users***

Wissam Tawileh (Dresden University of Technology, Germany)  
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***An Overview of the Challenges and Progress in PeEn-SMT: First Large Scale Persian-English SMT System***

Mahsa Mohaghegh (Massey University, New Zealand); Abdolhossein Sarrafzadeh (Unitec, New Zealand)  
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***An Automated Assessment and Reporting Tool for Introductory Java Programs***

Fatima AlShamsi (University of Sharjah, UAE); Ashraf Elnagar (Sharjah University, UAE)  
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**D3-S5: Embedded Systems**

***Detecting Matrix Multiplication Faults in Many-Core Systems***

Fadi Sibai (UAE University, UAE)  
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***First-order Theorem Proving Based Verification of the PCI-X Bus Architecture***

Amjad Gawanmeh (Khalifa University of Science, Technology and Research, UAE)

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***The Impact of Modeling the Overshooting Effect in Subthreshold Region for Nanoscale CMOS Inverter***

Abedalsalam Bani-Ahmed (Jordan University of Science and Technology, Jordan)

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***Intelligent Techniques for Image Segmentation in Cell Tracking and Mobility Analysis***

Ashraf Aly (Universiti Teknologi Malaysia, Malaysia)

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***Self-Optimizing Resource Management in High Throughput Computing Systems***

Zaib Imran (Kinnaird College For Women, Pakistan); Saba Z Bhatti (Kinnaird College for Women, Pakistan); Anam Tahir (Kinnaird College For Women, Pakistan); Malik Jahan Khan (LUMS, Pakistan)

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***Thresholding Using Quantum-dot Cellular Automata***

Bibhash Sen (National Institute of Technology, Durgapur, India); Anshu Anand (National Institute of Technology, Durgapur, India); Tanumoy Adak (National Institute of Technology Durgapur, India); Biplab K Sikdar (Bengal Engineering and Science University, India)

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***A Simulation of Life in a Medieval Town for Edutainment and Touristic Promotion***

Lucio T De Paolis (Salento University, Lecce, Italy); Giovanni Aloisio (University of Lecce, Italy); Luigi Oliva (Scuola Superiore ISUFI - Salento University, Italy); Pietro Vecchio (Scuola Superiore ISUFI - Salento University, Italy); Maria Celentano (Scuola Superiore ISUFI - Salento University, Italy)

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***Low Leakage Power SRAM Cell for Embedded Memory***

Baker Mohammad (Khalifa University of Science Technology and Research, UAE)

pp. 367-370

**D3-S3: Network-3**

***The Distance-to-Mean Broadcast Method for Vehicular Wireless Communication Systems***

Michael J Slavik (Florida Atlantic University, USA); Imad Mahgoub (Florida Atlantic University, USA); Fadi Sibai (UAE University, UAE)

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***An Adaptive Bandwidth Borrowing-Based Call Admission Control Scheme for Multi-Class Service Wireless Cellular Networks***

Sharifa Al Khanjari (German University of Technology in Oman, Oman); Bassel Arafeh (Sultan Qaboos University, Oman); Khaled Day (Sultan Qaboos University, Oman); Nasser Alzeidi (Sultan Qaboos University, Oman)

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***Estimate Primary User Localization Using Cognitive Radio Networks***

Nazar Radhi (Brunel University, United Kingdom); Kahtan Aziz (Al-Ghurair University, UAE); Sofian Hamad (Brunel University, United Kingdom); Hamed Saffa Al-Raweshidy (University of Brunel, United Kingdom)

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***A Novel Location Service Protocol in Multi-Hop Clustering Vehicular Ad Hoc Networks***

Liren Zhang (United Arab Emirates University, UAE); Hesham Elsayed (UAE University, UAE); Ezedin Barka (UAE University, UAE)

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***Adaptive Scheduling in Mobile Ad Hoc Networks Using Reinforcement Learning Approach***

Malika Bourenane (University of Senia, Algeria)  
pp. 392-397

***Network Coding with Multi-generation Mixing for Scalable and Non-Scalable Video Communication***

Mohammed D Halloush (Yarmouk University, Jordan); Hayder Radha (Michigan State University, USA)  
pp. 398-403

***Adaptive Rate Control in Object-Based Video Coding Using Non-Cooperative Game Theory***

Mohamed Khedr (Arab Academy for Science and Technology, Egypt); Nour El din Elmadany (AAST, Egypt)  
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**D3-S6: Security-2**

***A View on Latest Audio Steganography Techniques***

Fatiha Djebbar (UAEU, UAE); Beghdad Ayad (Al Ain University, UAE); Habib Hamam (Moncton University, Canada); Karim Abed-Meraim (Dept TSI, Télécom Paris, France)  
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***Recognizing Characters in Saudi License Plates Using Character Boundaries***

Khaled Almustafa (Prince Sultan University, Saudi Arabia); Rached N Zantout (Prince Sultan University, Saudi Arabia); Hasan R. Obeid (Zawya, Lebanon); Fadi Sibai (UAE University, UAE)  
pp. 415-420

***Distributed Worm Confinement Based on Cost-Benefit Analysis***

Maha Sliiti (Communication Networks and Security Research Lab., Tunisia); Mohamed Hamdi (Carthage University, Tunisia); Nouredine A. Boudriga (University of Carthage, Tunisia)  
pp. 421-426

***Security Estimation in Streaming Protocols***

Samir Ouchani (Concordia University, Canada); Yosr Jarraya (Concordia University, Canada); Otmane Ait Mohamed (Concordia University, Canada); Mourad Debbabi (Concordia University, Montreal, Canada)  
pp. 427-432

***High Capacity Diacritics-based Method for Information Hiding in Arabic Text***

Mohamed Lahcen Bensaad (University of Laghouat, Algeria); Mohamed Yagoubi (University of Laghouat, Algeria)  
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***Preventing Shoulder-Surfing When Selecting Pass-Images in Challenge Set***

Salem Jebriel (University of Glasgow, United Kingdom); Ron Poet (University of Glasgow, United Kingdom)  
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