### IAS / HIS’2013 - Program at a Glance

December 4-6, 2013, Laico Hotel, Yassmine Hammamet - Tunisia

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<tr>
<td>08:30-09:00</td>
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<td>Plenary Talk 3 (room A)</td>
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<td>09:00-09:30</td>
<td>#HIS 26,28,29,63 (room A)</td>
<td>Farhat Fnaiech (Tunisia)</td>
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<td>09:30-10:00</td>
<td>#HIS 3,33,36,66 (room B)</td>
<td>Tutorial – Part 1 (room A)</td>
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<td>10:00-10:30</td>
<td>Plenary Talk 2 (room A)</td>
<td>Tarek M. Hamdani (KSA)</td>
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<td>10:30-11:00</td>
<td>Imre J. Rudas (Hungary)</td>
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<td>11:00-11:30</td>
<td>Coffee Break</td>
<td>Coffee Break</td>
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<tr>
<td>11:30-12:00</td>
<td>#IAS 6,8,10,12,28 (room A)</td>
<td>Tutorial – Part 2 (room A)</td>
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<td>12:00-12:30</td>
<td>#HIS (posters): 2,6,10,11,17,27,35,38,43,45,46,48,53,54,65,69 (room B)</td>
<td>Tarek M. Hamdani (KSA)</td>
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<tr>
<td>12:30-13:00</td>
<td>#IAS &amp; #HIS Registration</td>
<td>Lunch</td>
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<td>13:00-13:30</td>
<td>Lunch</td>
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<td>13:30-14:00</td>
<td>Opening Session</td>
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<td>Plenary Talk 1 (room A)</td>
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<tr>
<td>14:30-15:00</td>
<td>Constantinos S. Pattichis (Cyprus)</td>
<td>#IAS 1,9,15,17,23,29 (room A)</td>
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<tr>
<td>15:00-15:30</td>
<td>#IAS 5,14,16,18 (room A)</td>
<td>#HIS 1,8,40,42,50,68 (room B)</td>
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<tr>
<td>15:30-16:00</td>
<td>#HIS 7,9,49,61 (room B)</td>
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<td>16:00-16:30</td>
<td>Coffee Break</td>
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<td>16:30-17:00</td>
<td>#HIS 19,24,25,30,64 (room A)</td>
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<td>17:00-17:30</td>
<td>#HIS 15,20,52,56,67 (room B)</td>
<td>#HIS 4,12,14,23,44,47 (room A)</td>
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<td>17:30-18:00</td>
<td>#IAS (Posters): 7,20,21,22,26,27 (hall)</td>
<td>#HIS 18,21,22,32,37,55 (room B)</td>
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<td>18:00-18:30</td>
<td>Gala Dinner &amp; Awards</td>
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Plenary Talk 1
Time: Wednesday, December 04, 2013, 14:30 – 15:30
Location: Room A
Chair: Mounir Ben Ayed (Univ. Sfax, Tunisia)

New Trends in Computational Intelligence in Health Applications
Constantinos S. Pattichis
Department of Computer Science, University of Cyprus, Cyprus

Abstract. Cardiovascular (CV) disease is one of the most common causes of death worldwide and represents a major financial burden for national economies. Effective prediction and prevention of CV disease particularly that which resulted from high-risk asymptomatic atherosclerosis, has now become a top priority. The goal of this lecture will be to give a review of non-invasive ultrasound image processing methods that are used to facilitate the intelligent analysis of carotid plaque morphology for predicting stroke risk. The lecture will begin with a review of clinical methods for visual classification that have led to standardized methods for image acquisition. Methods for ultrasound imaging atherosclerotic plaque denoising, and image segmentation will then be described, followed by an overview of the several multi-scale texture-feature extraction algorithms and classification methods investigated. Risk modeling based on clinical and ultrasonic plaque texture features that enable the assessment of the risk of stroke will be described.

Biography. Constantinos S. Pattichis is currently Professor with the Department of Computer Science of the University of Cyprus. His research interests include ehealth and mhealth, medical imaging, biosignal analysis, life sciences informatics, and intelligent systems. He has published 80 refereed journal and 190 conference papers, and 27 chapters in books in these areas. He is Co-Editor of the books M-Health: Emerging Mobile Health Systems, and of the Ultrasound and Carotid Bifurcation Atherosclerosis, published by Springer in 2006, and 2012 respectively. He was Guest Co-Editor of 11 journal Special Issues including the more recent ones on Atherosclerotic Cardiovascular Health Informatics, and Citizen Centered e-Health Systems in a Global Health-care Environment, of the IEEE Trans. on Information Technology in Biomedicine. He was General Co-Chairman of the IEEE 12th International Conference on BioInformatics and BioEngineering (BIBE2012), and the IEEE Information Technology in Biomedicine (ITAB09). Moreover, he serves as Distinguished Lecturer of the IEEE EMBS, an Associate Editor of the IEEE Journal of Biomedical and Health Informatics, and on the Editorial Board of the Journal of Biomedical Signal Processing and Control. He is a Fellow of IET, and Senior Member of IEEE.
IAS5  Trusted Integration of Cloud-based NFC Transaction Players
Pardis Pourghomi\textsuperscript{1}, Muhammad Qasim Saeed\textsuperscript{2} and Gheorghita Ghinea\textsuperscript{3}
\textsuperscript{1} School of Information System, Computing and Mathematics, Brunel University, UK
\textsuperscript{2} Information Security Group (ISG), Royal Holloway University of London, UK

IAS14  A professional view on eBanking Authentication: Challenges and Recommendations
Jordi Aguilà\textsuperscript{1}, Jetzabel M. Serna-Olvera\textsuperscript{2}, Manel Medina\textsuperscript{3}, Andreas Sfakianakis\textsuperscript{3} and Luis Ángel Fernández\textsuperscript{2}
\textsuperscript{1} CSRIT CaixaBank Barcelona, Spain
\textsuperscript{2} Security Research Group Barcelona Digital Technology Centre Barcelona, Spain
\textsuperscript{3} Risk & Analysis Research Group Core Operations - ENISA Heraklion, Greece

IAS16  How to Grant Less Permissions to Facebook Applications
Gianpiero Costantino, Fabio Martinelli and Daniele Sgandurra
Istituto di Informatica e Telematica Consiglio Nazionale delle Ricerche, Pisa, Italy

IAS18  A wavelet network speech recognition system to control an augmented reality object
Dhekra Bousnina\textsuperscript{1}, Ridha Ejbali\textsuperscript{2}, Mourad Zaied\textsuperscript{2} and Chokri Ben Amar\textsuperscript{2}
\textsuperscript{1} Higher Institute of Computer and Multimedia of Gabes, University of Gabes, Tunisia
\textsuperscript{2} REGIM-Lab.: Research Groups on Intelligent Machines, University of Sfax, Tunisia
HIS7  Hill-climber Based Fuzzy-Rough Feature Extraction with an Application to Cancer Classification  
Sujata Dash  
Department of Computer Science, Gandhi Institute for Technology, India

HIS9  Performance Evaluation of Fuzzy Cluster Validity Indexes for Optimal Data Clustering  
Mahdi Ouziala and Hacene Habbi  
Applied Automation Laboratory, University of Boumerdès, Algeria

HIS49  Hybrid Naive Possibilistic Classifier for Heart Disease Detection from Heterogeneous Medical Data  
Karim Baati\textsuperscript{1,2}, Tarek M. Hamdani\textsuperscript{1,3} and Adel M. Alimi\textsuperscript{1}  
\textsuperscript{1}REGIM-Lab.: Research Groups on Intelligent Machines, University of Sfax, Tunisia  
\textsuperscript{2}University of Monastir, Higher Institute of Computer Science of Mahdia, Tunisia  
\textsuperscript{3}Taibah Univ., College of Science and arts at Al-Ula, al-Madinah al-Munawwarah, KSA

HIS61  Failure and Power Utilization System Models of Differential Equations by Polynomial Neural Networks  
Ladislav Zjavka\textsuperscript{1} and Ajith Abraham\textsuperscript{2}  
\textsuperscript{1}VŠB-Technical University of Ostrava Ostrava, Czech Republic  
\textsuperscript{2}MIR-Labs: Scientific Network for Innovation and Research Excellence, USA
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<thead>
<tr>
<th>Session</th>
<th>Title</th>
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<tr>
<td>HIS19</td>
<td>Performance Evaluation of Random Forest Regression Model in Tracking Parkinson’s Disease Progress</td>
<td>Tomáš Peterek(^1), Maros Šmondrk(^1,2), Pavel Dohnálek(^1,2) and Petr Gajdos(^3)</td>
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<td></td>
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<td>(^1) IT4innovations, Centre of Excellence, Czech Republic</td>
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<td>(^2) Department of Computer Science, FEECS, Czech Republic</td>
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<td>(^3) VSB - Technical University of Ostrava, Czech Republic</td>
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<td>HIS24</td>
<td>A new bayesian model for QoS provisioning in DiffServ over MPLS Networks</td>
<td>Ali El Kamel, Hamdi Eltaief and Habib Youssef</td>
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<td>RU PRINCE, ISITCOM Hammem Sousse, University of Sousse, Tunisia</td>
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<td>HIS25</td>
<td>User Behaviour Classification using Fuzzy Rule Based System</td>
<td>Atta Rahman(^1,2), Dur-e-Najaf Zaidi(^1), M. Hammad Salam(^3) and Shahid Jamil(^1)</td>
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<td></td>
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<td>(^1) PMAS-Arid Agriculture University, Pakistan</td>
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<td></td>
<td></td>
<td>(^2) Institute of signals, systems and softcomputing (ISSS), Islamabad, Pakistan</td>
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<tr>
<td></td>
<td></td>
<td>(^3) The University of Lahore, Islamabad Campus, Islamabad, Pakistan</td>
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<tr>
<td>HIS30</td>
<td>Bayesian networks for user modeling: Predicting the user’s preferences</td>
<td>Rim Rebai, Mohamed Amin Maalej, Adel Mahfoudhi</td>
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<td>Computer Embedded System ENIS, University of sfax Tunisia</td>
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<td>HIS64</td>
<td>An Intelligent Recommender system for drinking water quality</td>
<td>Samar Mahmoud(^1,<em>), Nashwa El-Bendary(^2,</em>), Mahmood A. Mahmood(^3,<em>) and Aboul Ella Hassanien(^1,</em>)</td>
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<td></td>
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<td>(^1) Faculty of Computers and Information, Cairo University, Cairo, Egypt</td>
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<td>(^2) Arab Academy for Science, Technology, and Maritime Transport, Cairo, Egypt</td>
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<td></td>
<td></td>
<td>(^3) ISSR, Computer Sciences and Information Dept., Cairo University, Cairo, Egypt</td>
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<td>(*) Scientific Research Group in Egypt, (SRGE), Egypt</td>
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HIS15  A heuristic multi-agents model to solve the P || Cmax: application to the DDBAP in a container terminal
Sami Mnasri and Kamel Zidi
Laboratoire SOIE, ISG Tunis, Tunisia

HIS20  Face recognition based on Beta 2D Elastic Bunch Graph Matching
Ridha Ejbali, Mourad Zaied and Chokri Ben Amar
REGIM-Lab.: Research Groups on Intelligent Machines, University of Sfax, Tunisia

HIS52  A new System for TV program contents improvement using a semantic matching technique
Olfa Ben Said, Ali Wali and Adel M Alimi
REGIM-Lab.: Research Groups on Intelligent Machines, University of Sfax, Tunisia

HIS56  Formal concept analysis approach for comparison between mutagenicity and carcinogenicity in Cheminformatics
Mostafa Salama1,*, Aboul Ella Hassanien2,* and Adel Alimi3
1 British University in Egypt, Department of Computer Science, Cairo, Egypt
2 Cairo University, Faculty of Computers and Information, Cairo, Egypt
3 REGIM-Lab.: Research Groups on Intelligent Machines, University of Sfax, Tunisia
* Scientific Research Group in Egypt (SRGE), Egypt

HIS67  Design and implementation of a pervasive occupancy displaying system in an academic environment
Andrzej Romanowski1, Pawel Wozniak2, Zbigniew Chaniecki1, Krzysztof Grudzień3, Hela Garbaa1, Lidia Jackowska-Strumiłło1 and Dominik Sankowski1
1 Institute of Applied Computer Science, Lodz University of Technology Lodz, Poland
2 Department of Applied IT, Chalmers University of Technology Gothenburg, Sweden
#IAS – Poster Session

Time: Wednesday, December 04, 17:10 - 18:50

Location: Hall

Chair: Gianpiero Costantino (IIT-CNR, Italy)

IAS7  Developing ECC Applications in Java Card
Victor Gayoso Martinez and Luis Hernández Encinas
Spanish National Research Council (CSIC), Spain

IAS20  The State of the Art of Risk Assessment and Management for Information Systems
Lulu Liang, Ren Wang, Song Jing, Hu Huaming, He Qiang and Fang Shuo
China Information Technology Security Evaluation Center, China

IAS21  Enhanced P2P Botnets Detection Framework Architecture with Hybrid Analyzer: Host-based and Network-based
Raihana Syahirah Abdullah, Faizal M.A., Zul Azri Muhamad Noh, Mohd Zaki Mas’ud,
Siti Rahayu Selamat and Shahrin Sahib
Universiti Teknikal Malaysia Melaka (UTeM), Malaysia

IAS22  Profiling Mobile Malware behaviour through Hybrid Malware analysis Approach
Mohd Zaki Mas’ud, Shahrin Sahib, Mohd Faizal Abdollah, Siti Rahayu Selamat, Robiah Yusof and Rabiah Ahmad
Universiti Teknikal Malaysia Melaka (UTeM), Malaysia

IAS26  Privacy Preserving Processing of Data Decision Tree Based on Sample Selection and Singular Value Decomposition
Priyank Jain¹, Neelam Pathak¹, Pratibha Tapashetti² and A.S. Umesh³
¹ Dept of CSE, AISECT University, India
² NIMS University, India
³ Dept of CSE, TIT & Science, India

IAS27  A Secured Model for Indian E-Health System
Shilpa Srivastava¹, Namrata Agarwal², Millie Pant³ and Ajith Abraham⁴
¹ RKGIT, MCA Department, Ghaziabad, India
² NIFM, Faridabad, India
³ Indian Institute of Technology Roorkee, India
⁴ MIR-Labs, USA
HIS26  AVAS: Speech Database for Multimodal Speech Recognition Applications
Samar Antar\textsuperscript{1}, Alaa Sagheer\textsuperscript{1,2}, Saleh Aly\textsuperscript{1,3} and Mohamed Tolba\textsuperscript{4}
\textsuperscript{1} Center for Artificial Intelligence and Robotics (CAIRO), Egypt
\textsuperscript{2} Department of Mathematics, Faculty of Science, Egypt
\textsuperscript{3} Faculty of Engineering Aswan University, Aswan, Egypt
\textsuperscript{4} Faculty of Computers and Information, Ain Shams University Cairo, Egypt

HIS28  Vocabulary Tree Schema Based on SURF Descriptor for Real Time Object Detection and Recognition in Video
Imen Masmoudi, Maher El’arbi and Chokri Ben Amar
REGIM-Lab.: Research Groups on Intelligent Machines, University of Sfax, Tunisia

HIS29  Vision system for licence plate recognition based on neural networks
Eva Volna and Martin Kotyrba
Department of Computer Science, University of Ostrava, Czech Republic

HIS63  Video Summarization Using Viewer Affective Feedback
Majdi Dammak, Ali Wali and Adel Alimi
REGIM-Lab.: Research Groups on Intelligent Machines, University of Sfax, Tunisia
HIS – Function Approximation II

Time: Thursday, December 05, 2013, 08:30 – 09:50
Location: Room B
Chair: Alexandre Ramos (UNIFEI, Brazil)

HIS3  Efficient Link Adaptation in OFDM Systems using a Hybrid Intelligent Technique
Atta Rahman$^{1,2}$, Ijaz Mansoor$^{2,3}$, M. Hammad Salam$^{4}$ and Muhammad Tahir Naseem$^{1,2}$
$^1$Barani Institute of Information Technology, Rawalpindi, Pakistan
$^2$Institute of Signals, Systems and Soft-computing (ISSS), Islamabad, Pakistan
$^3$Department of Electrical Engineering, Air University, Islamabad, Pakistan

HIS33 A Novel Recommendation System Approach Utilizing Social Network Profiles
Timo Kähärä, Keijo Haataja and Pekka Toivanen
University of Eastern Finland, School of Computing, Finland

HIS36 An Intelligent Approach for Galaxies Images Classification
Mohamed Abd Elfattah$^{1,5}$, Nashwa Elbendary$^{2,5}$, Mohamed Abu Elsoud$^{1,5}$, Aboul Ella Hasssanien$^{3,5}$ and Mohamed Tolba$^5$
$^1$Faculty of Computers and Information System, Mansoura University, Egypt
$^2$Arab Academy for Science, Technology, and Maritime Transport, Cairo, Egypt
$^3$Faculty of Computers and Information, Cairo University, Cairo, Egypt
$^4$Faculty of Computers and Information, Ain Shams University, Egypt
$^5$Scientific Research Group in Egypt (SRGE), Egypt

HIS66 Contextual processing of ECT measurement information towards detection of process emergency states
Andrzej Romanowski$^1$, Krzysztof Grudzień$^1$, Zbigniew Chaniecki$^1$ and Paweł Woźniak$^2$
$^1$Institute of Applied Computer Science, Lodz University of Technology Lodz, Poland
$^2$Department of Applied IT, Chalmers University of Technology Gothenburg, Sweden
Cloud Computing with Special Emphases on Intelligent Robotics

Imre J. Rudas

Öbuda University, Budapest, Hungary

Abstract. Cloud Computing as an emerging technology is a new paradigm in Information Technology and has dramatically changed our everyday life. The presentation summarizes the basics of cloud computing, namely the main idea, the definition, the cloud model composed of essential characteristics, service models and deployment models. In the second part of the presentation the possible applications of cloud computing in robotics are outlined with special emphases to robots as a service in cloud computing. Finally some cloud robotics projects are discussed. The last part of the presentation summarizes the results and ideas of a new generation internet and Cloud Technology based Virtual Collaboration Arena (VirCA) developed in Hungary and some of its application possibilities in Intelligent Robotics.

VirCA provides a platform where users can build, share and manipulate 3D content, and collaboratively interact with real-time processes in a 3D context, while the participating hardware and software devices can be spatially and/or logically distributed and connected together via IP network. The 3D content and processes in VirCA can be synchronized with the real world, which allows the combination of reality and virtual world in the collaboration arena.

Biography. Imre J. Rudas graduated from Bánki Donát Polytechnic, Budapest in 1971, received the Master Degree in Mathematics from the Eötvös Loránd University, Budapest, the Ph.D. in Robotics from the Hungarian Academy of Sciences in 1987, while the Doctor of Science degree from the Hungarian Academy of Sciences in 2004. He received his first Doctor Honoris Causa degree from the Technical University of Košice, Slovakia and the second one from “Polytechnica” University of Timişoara, Romania. He is active as a full university professor. He served as the President of Budapest Tech from 2003 till 2010. He was elected in 2010 as the President of Óbuda University, the successor of Budapest Tech for a period of five years. He is the treasurer of IFSA (International Fuzzy System Association), he had been the President of Hungarian Fuzzy Association for ten years, he is the Vice-President of the Hungarian Academy of Engineering. He has been an active member of IEEE. He was a member of IEEE Board of Directors RAB, TAB Section/Chapter Support Committee in 1998. He is a Fellow of IEEE, Senior AdCom member of IES, he was a Vice-President of IEEE Industrial Electronics Society in 2000-2001, and he is a Distinguished Lecturer of IES. He was elected as the Chair of IEEE Hungary Section for the period 2008-1012. He has been the founding chair of IEEE Hungary Chapter of Systems, Man, and Cybernetics Society since 2003; he was the Region 8 Chapter Coordinator for SMC during the period 2002-04. He has been serving as a Technical Program Committee member the annual SMC conferences for many years. He served as a BoG member of SMC in the period 2007-2010 and 2012, he has been a Distinguished Lecturer of the Society since 2009. His present areas of research activities are Computational Cybernetics, Intelligent Robotics with special emphasis on Robot Control, Soft Computing, Computed-aided Process Planning, Fuzzy Control and Fuzzy Sets. He has published books, more than 700 papers in books, scientific journals and peer reviewed international conference proceedings.
Thursday, December 05, 2013

#IAS — Information & Assurance Security II

Time: Thursday, December 05, 11:10 – 12:50
Location: Room A
Chair: Chokri Ben Amar (University of Sfax, Tunisia)

IAS6  Flexibility vs. Security in Linked Enterprise Data Access Control Graphs
Markus Graube, Patricia Ortiz, Manuel Carnerero, Oscar Lázaro, Mikel Uriarte
and Leon Urbas
1 Technische Universität Dresden, Germany
2 R&D, ICT Unit, Innovalia Association S.A., Bilbao, Spain
3 R&D, Nextel S.A., Bilbao, Spain

IAS8  Information Flow Policies vs Malware
Radoniaina Andriatsimandefitra, Thomas Saliou and Valérie Viet Triem Tong
1 SUPELEC/INRIA/CNRS/University of Rennes, France

IAS10 Detecting Stepping-Stones under the Influence of Packet Jittering
Wei Ding, Khoa Le and Shou-Hsuan Stephen Huang
Department of Computer Science, University of Houston, USA

IAS12 ARMLCC: Adaptive and Recovery-based Multi-Layer Connected Chain Mechanism for Multicast Source Authentication
Hamdi Eltaief, Ali El Kamel and Habib Youssef
Research Unit PRINCE, ISITCom, University of Sousse, Tunisia

IAS28 A System of Abnormal Behaviour Detection in Aerial surveillance
Ahlem Walha, Ali Wali and Adel M. Alimi
REGIM-Lab.: Research Groups on Intelligent Machines, University of Sfax, Tunisia
# Poster Session

**Thursday, December 05, 2013**

**HIS2**
**DSP based Embedded Fingerprint Recognition System**
Maddu Kamaraju and P Anil Kumar  
*E.C.E Department, Gudlavalleru Engineering College, Gudlavalleru, India*

**HIS6**
**A Rough-fuzzy C-means Using Information Entropy for Discretized Violent Crimes Data**  
Chao Yang¹,², Shiuyuan Che¹, Xueting Cao², Yeqing Sun², Ajith Abraham³  
¹ School of Information Science and Technology, Dalian Maritime University, China  
² Institute of Environmental Systems Biology, Dalian Maritime University, China  
³ Machine Intelligence Research Labs (MIR Labs), USA

**HIS10**
**An Artificial Neural Network approach to Text Summarization for the South Indian Language of Kannada**  
Jayashree R¹, Srikantamurthy K¹ and Basavaraj S Anami²  
¹ Department of Computer, Science PES Institute of Technology Bangalore, India  
² Department of Computer, Science PES School of Engineering Bangalore, India

**HIS11**
**Kernel-Based Object Tracking Using Particle Filter with Incremental Bhattacharyya Similarity**  
Mohammad Mahdi Dehshibi¹, Amir Vafanezhad² and Jamshid Shanbehzadeh³  
¹ Dept. of Computer Engineering, I.A.U., Science and Research Branch Tehran, Iran  
² Department of Mechatronics, I.A.U., Science and Research Branch Tehran, Iran  
³ 3 Department of Computer Engineering, Kharazmi University Tehran, Iran

**HIS17**
**Fuzzy Modeling System based on Hybrid Evolutionary Approach**  
Yosra Jarraya¹, Souhir Bouaziz¹, Adel M. Alimi¹ and Ajith Abraham²,³  
¹ REGIM-Lab.: Research Groups on Intelligent Machines, University of Sfax, Tunisia  
² Machine Intelligence Research Labs, WA, USA  
³ IT4Innovations, VSB-Technical University of Ostrava, Czech Republic

**HIS27**
**Kernel-Based Persian Viseme Clustering**  
Mohammad Mahdi Dehshibi, Meysam Alavi and Jamshid Shanbehzadeh  
¹ Dept. of Computer Engineering, I.A.U., Science and Research Branch Tehran, Iran  
² Computer Engineering Department, University of Science & Culture Hamedan, Iran  
³ 3 Department of Computer Engineering, Kharazmi University Tehran, Iran

**HIS35**
**Ant-based clustering algorithm for magnetic resonance breast image segmentation**  
Hossam Moftah¹,², Aboul Ella Hassanien³,⁴, Adel Alimi³, Hichem Karray³ and Mohamed Tolba⁵  
¹ Faculty of Computers and Information, Beni Suef University, Egypt  
² Faculty of Computers and Information, Cairo University, Cairo, Egypt  
³ REGIM-Lab.: Research Groups on Intelligent Machines, University of Sfax, Tunisia  
⁴ Faculty of Computers and Information Science, Ain Shams University, Egypt  
⁵ Scientific Research Group in Egypt (SRGE), Egypt

**HIS38**
**State and fault estimation of linear stochastic discrete time systems**  
Bessaoudi Talel, Fayçal Ben Hmida  
*Research Unit C3S ESSTT, University of Tunis, Tunisia*
HIS43  Repeated Reselling Permission Multi-Reselling Approach for a License in DRM Environment
Taker Gaber$^{1,4}$, Aboul Ella Hassanien$^{2,4}$ and Mohamed Tolba$^3$
1 Faculty of Computers and Informatics, Suez Canal University, Ismailia, Egypt
2 Faculty of Computers and Information, Cairo University, Cairo, Egypt
3 Faculty of Computers and Information Science, Ain Shams University, Egypt
4 Scientific Research Group in Egypt (SRGE), Egypt

HIS45  Community Detection in Social Networks by using Bayesian network and Expectation Maximization technique
Ahmed Ibrahim Hafez$^{1,*}$, Aboul Ella Hassanien$^{2,*}$, Aly Fahmy$^2$ and Mohamed Tolba$^3$
1 CS Dept., Faculty of Computer and Information, Minia University, Egypt
2 Faculty of Computers and Information, Cairo University, Egypt
3 Faculty of Computer and Information Science, Ain Shams University, Egypt
* Scientific Research Group in Egypt (SRGE), Egypt

HIS46  Multi-layer hybrid machine learning techniques for anomalies detection and classification approach
Amira Sayed A. Aziz$^1$, Aboul Ella Hassanien$^2$, Sanaa El-Ola Hanafy$^3$ and Mohamed Tolba$^4$
1 Universite Francaise d’Egypte (UFE), Cairo, Egypt
2 Scientific Research Group in Egypt (SRGE), Egypt
3 Faculty of Computers and Information, Cairo University, Egypt
4 Faculty of Computers and Information, Ain Shams University, Egypt

HIS48  Decision Support System for Customer Churn Reduction Approach
Soumya Banerjee$^{1,5}$, Nashwa Elbendary$^{2,5}$, Aboul Ella Hassanien$^{3,5}$ and Mohamed Tolba$^4$
1 Department of Computer Science, Birla Institute of Technology, Mesra, India
2 Arab Academy for Science, Technology, and Maritime Transport, Cairo, Egypt
3 Faculty of Computers and Information, Cairo University, Egypt
4 Faculty of Computers and Information, Ain Shams University, Egypt
5 Scientific Research Group in Egypt (SRGE), Egypt

HIS53  Fuzzy Ant Supervised by PSO and Simplified Ant Supervised PSO Applied to TSP
Nizar Rokbani$^1$, Adel M. Alimi$^1$ and Ajith Abraham$^2$
1 REGIM-Lab.: Research Groups on Intelligent Machines, University of Sfax, Tunisia
2 Machine Intelligence Research Labs, WA, USA

HIS54  LS$^2$R: A Local Search Algorithm to solve Scheduling Radiotherapy Problems
Maria Cristina Riff, Juan Pablo Cares and Ignacio Araya
Universidad Técnica Federico Santa Maria, Computer Science Department, Chile

HIS65  A New Approach of Preprocessing with SVM Optimization Based on PSO for Bearing Fault Diagnosis
T. Thelaidjia and S. Chenikher
Tebessa University, Algeria

HIS69  Emotion Recognition by Analysis of EEG Signals
Hayfa Blaeich, Mohamed Neji, Ali Wali and Adel M. Alimi
REGIM-Lab.: Research Groups on Intelligent Machines, University of Sfax, Tunisia
Thursday, December 05, 2013

#IAS — Information & Assurance Security III
Time: Thursday, December 05, 14:00 – 16:00
Location: Room A
Chair: Shou-Hsuan Stephen Huang (University of Houston, USA)

IAS1  Fingerprint Verification Using SVD Features
Ala Balti, Mounir Sayadi
SIME Laboratory, ENSIT, University of Tunis, Tunisia

IAS9  Hierarchical object log format for normalisation of security events
Andrey Sapegin, David Jaeger, Amir Azodi, Marian Gawron and Feng Cheng
Hasso Plattner Institute (HPI), University of Potsdam, Germany

IAS15 Quantitative Penetration Testing with Item Response Theory
Florian Arnold, Wolter Pieters and Marielle Stoelinga
University of Twente, The Netherlands

IAS17 Towards Enforcing On-The-Fly Policies in BYOD Environments
Gianpiero Costantino¹, Fabio Martinelli¹, Andrea Saracino¹² and Daniele Sgandurra¹
¹ Istituto di Informatica e Telematica Consiglio Nazionale delle Ricerche, Pisa, Italy
² Dipartimento di Ingegneria dell’Informazione Università di Pisa, Italy

IAS23 A survey on digital tracing traitors schemes
Faten Chaabane, Maha Charfeddine and Chokri Ben Amar
REGIM-Lab.: Research Groups on Intelligent Machines, University of Sfax, Tunisia

IAS29 An intelligent System for New Event Detection
Yassine Aribi, Ali Wali and Adel M. Alimi
REGIM-Lab.: Research Groups on Intelligent Machines, University of Sfax, Tunisia
Thursday, December 05, 2013

#HIS – Function Approximation III
Time: Thursday, December 05, 14:00 – 16:00
Location: Room B
Chair: Osmar Zaiane (University of Alberta, Canada)

**HIS1** Using ANN and UAV for Terrain Surveillance: A Case Study for Urban Areas Observation
Luiz F. Felizardo¹, Rodrigo L. Mota¹, Elcio H. Shiguemori², Marcos T. Neves¹, Alexandre B. Ramos¹ and Felix Mora-Camino³
¹ Institute of Mathematics and Computing, Federal University of Itajubá, Brazil
² Institute of Advanced Studies, Brazil
³ Ecole Nationale de l’Aviation Civile, France

**HIS8** Measure optimized cost-sensitive neural network ensemble for multiclass imbalance data learning
Peng Cao¹, Dazhe Zhao¹ and Osmar Zaïane²
¹ Northeastern University Shenyang, China
² Computing Science, University of Alberta Edmonton, Canada

**HIS40** Kekre’s Transform for Protecting Fingerprint Template
Kareem Kamal A.Ghany¹,5, Hesham Hefny³, Aboul Ella Hassanien²,5 and Mohamed Tolba⁴
¹ Faculty of Computers and Information, BeniSuef University, Egypt
² Faculty of Computers and Information, Cairo University, Cairo, Egypt
³ Department of Computer Sciences and Information, ISSR, Cairo University, Egypt
⁴ Faculty of Computers and Information Science, Ain Shams University, Egypt
⁵ Scientific Research Group in Egypt (SRGE), Egypt

**HIS42** Hajj Human Event Classification System using Machine Learning Techniques
Hossam M. Zawbaa¹,4, Eid Emary²,4, Aboul Ella Hassanien²,4 and Mohamed Tolba³
¹ Faculty of Computers and Information, BeniSuef University, Egypt
² Faculty of Computers and Information, Cairo University, Cairo, Egypt
+ Faculty of Computers and Information, Cairo University, Egypt
³ Faculty of Computers and Information, Ain Shams University, Egypt
⁴ Scientific Research Group in Egypt (SRGE), Egypt

**HIS50** Combined Local Features Selection for Face Recognition Based on Naïve Bayesian Classification
Wael Ouarda, Hanene Trichili, Adel M. Alimi and Basel Solaiman
¹ REGIM-Lab.: Research Groups on Intelligent Machines, University of Sfax, Tunisia
² ITI Department Telecom Bretagne, Brest, France

**HIS68** Blind Separation of Underdetermined Mixtures with Additive White and Pink Noises
Ossama S. Alshabrawy¹,3, Aboul ella Hassanien²,3, W. A. Awad⁴, A. A. Salama⁴
¹ Faculty of Science, Damietta University, Damietta, Egypt
² Faculty of Computers & Information, Cairo University, Cairo, Egypt
³ Scientific Research Group in Egypt (SRGE), Egypt
⁴ Faculty of Science, Port Said University, Egypt
HIS4  Improved solution based on Bat Algorithm to Vehicle Routing Problem in a Caravan Range Community
Alberto Ochoa¹, Lourdes Margain², Julio Arreola³, Alejandro De Luna³, Geovani García³, Erika Soto³, Saúl González³, Kyrk Haltaufoerhyde⁴ and Vinicius Scarandangotti⁴
¹ Juarez City University, México
² Universidad Politécnica de Aguascalientes, México
³ Cardiff Technological University, Wales
⁴ Sassari University, Italy

HIS12  A Contribution to the Resolution of Stochastic Dynamic Dial a Ride Problem with NSGAII
Brahim Issaoui¹, Lazhar Khelifi¹, Issam Zidi¹,², Kamel Zidi¹,² and Khaled Ghedira¹
¹ Laboratoire SOIE, University of Tunis, Tunisia
² University of Gafsa, Faculty of Sciences of Gafsa, Tunisia

HIS14  A multi-objective BCRC-NSGAII algorithm to resolve the VRPTW
Sami Mnasri, Fatma Abbes, Kamel Zidi and Khaled Ghedira
Laboratoire SOIE, ISG Tunis, Tunisia

HIS23  Hybridization of Fuzzy PSO and Fuzzy ACO Applied to TSP
Walid Elloumi¹, Nesrine Baklouti¹, Ajith Abraham²,³ and Adel Alimi¹
¹ REGIM-Lab.: Research Groups on Intelligent Machines, University of Sfax, Tunisia
² Machine Intelligence Research Labs, WA, USA
³ IT4Innovations, VSB-Technical University of Ostrava, Czech Republic

HIS44  Hierarchical design for distributed MOPSO using sub-swarms based on a population Pareto fronts analysis for the grasp planning problem
Raja Fdhila¹, Chiraz Walha¹, Tarek M. Hamdani¹,² and Adel M. Alimi¹
¹ REGIM-Lab.: Research Groups on Intelligent Machines, University of Sfax, Tunisia
² University of Monastir, Higher Institute of Computer Science of Mahdia, Tunisia
³ Taibah Univ., College of Science and arts at Al-Ula, al-Madinah al-Munawwarah, KSA

HIS47  New Global Update Mechanism of Ant Colony System for Retinal Vessel Segmentation
Ahmed Hamza Asad¹,⁴, Eid Emary²,⁴, Aboel Ella Hassanien²,⁴ and Mohamed Tolba³
¹ Institute of Statistical Studies and Researches (ISSR), Cairo University, Egypt
² Faculty of Computers and Information, Cairo University, Egypt
³ Faculty of Computers and Information, Ain Shams University, Egypt
⁴ Scientific Research Group in Egypt (SRGE), Egypt
### HIS - Intelligent Applications II

**Time:** Thursday, December 05, 16:20 – 18:20  
**Location:** Room B  
**Chair:** Kamel Zidi (University of Gafsa, Tunisia)

#### HIS18  
**MPC based on NBPSO for Nonlinear Process with constraints**  
*Adel Taeib, Moez Soltani and Abdelkader Chaari*  
*Research Unit C3S ESSTT, University of Tunis, Tunisia*

#### HIS21  
**Using visualization techniques in knowledge discovery process for decision making**  
*Emna Benmohamed, Hela Ltifi and Mounir Ben Ayed*  
*REGIM-Lab.: Research Groups on Intelligent Machines, University of Sfax, Tunisia*

#### HIS22  
**PSO based adaptive learning Fuzzy Logic Controller for the Irobot Create robot**  
*Nesrine Baklouti, Hachem Lamti, Khaled Salhi and Adel M. Alimi*  
*REGIM-Lab.: Research Groups on Intelligent Machines, University of Sfax, Tunisia*

#### HIS32  
**An Empirical Analysis of Cancellable Transformations in a Behavioural Biometric Modality**  
*Marcelo Damasceno and Anne Canuto*  
*Federal University of Rio Grande do Norte (UFRN) Natal, Brazil*

#### HIS37  
**Automatic Nile Tilapia Fish Classification Approach using Machine Learning Techniques**  
*Mohamad Mostafa M. Fouad\(^1,4\), Hossam Zawbaa\(^2,4\), Nashwa El Bendary\(^1,4\) and Aboul Ella Hassanien\(^1,4\)*  
\(^1\) Arab Academy for Science, Technology, and Maritime Transport, Cairo, Egypt  
\(^2\) BeniSuef University, Faculty of Computers and Information, BeniSuef, Egypt  
\(^3\) Cairo University, Faculty of Computers and Information, Cairo, Egypt  
\(^4\) Scientific Research Group in Egypt (SRGE), Egypt

#### HIS55  
**Fuzzy clustering and categorization of text documents**  
*Heba Ayteldeen\(^1,2\), Aboul Ella Hassanien\(^1,2\) and Aly Fahmy\(^1\)*  
\(^1\) Cairo University, Faculty of Computers and Information, Egypt  
\(^2\) Scientific Research Group in Egypt (SRGE), Egypt
Plenary Talk 3  
Time: Friday, December 06, 2013, 08:30 – 09:00  
Location: Room A  
Chair: Imre J. Rudas (Óbuda University, Hungary)

New Trends in Research in Neural Networks and Applications  
Farhat Fnaiech  
University of Tunis, Tunisia

Abstract. In this presentation, the feedforward neural network (FNN) is presented and reviewed; many algorithms for the training of the FNN are also presented. The new trends in research of efficient training algorithms are proposed. A couple of trends are to be presented and developed such as the fast training algorithms and the optimal search of NN structure. Pruning algorithms are discussed and new statistical based algorithms are presented. These FNN pruned structure are then applied on real world applications to control medical devises, image processing of medical imaging, fault diagnosis etc.

Biography. Farhat Fnaiech (M’85 - SM’01) born in 1955 in la Chebba (Tunisia), he received the BSc degree in Mechanical Engineering in 1978 from the ENSET High school of sciences and techniques of Tunis and the master degree in 1980, the Doctorate of 3 cycle degree from the same school in Electrical Engineering in 1983, and the Doctorate Es Science in Physics from Faculte des Sciences of Tunis in 1999. He is currently Professor at the Ecole Superieure des Sciences and Techniques of Tunis.  
Pr Fnaiech has published More than 250 research papers in many journals and international conferences. He has organized many national and international conferences and has been the general chairman and member of the international Board committee of many International Conferences, ICIT 2004, ICELIE 2006-2012, ISIE 2006-2012, IECON 2005-2012. His is Associate Editor of IEEE Transactions Industrial Electronics. He has served as IEEE Chapter committee coordination sub-committee delegate of Africa Region 8 and Vice Chair of IEEE Tunisia Section. He has been appointed as an AdCom member in IEEE Industrial Electronics Society. He is the head of a big research laboratory in Signal Image and Energy Mastery in the University of Tunis (100 researchers). His main interest research areas are nonlinear adaptive Signal processing, nonlinear control of power electronic.
What's going on with Machine Intelligence and Human being?

Tarek M. Hamdani

Taibah University, Saudi Arabia

Talk 1: Machine vs. Human Intelligence: Are we in front of a new causality dilemma?

Abstract. It's certain that the human is inventing the machines to bring him assistance and help him to do things easily and effectively. However, intelligent machines can't be anything more than a kind of machine that human intelligence made to have further services. Nowadays, intelligent machines are more and more developed and the machine intelligence is extremely developed in such manner that researchers now think about a “Machine Ethics” that can protect the human from the machine. Moreover, men takes their intelligence progressively from intelligent machines so that one can ask “Which comes first, the human or the machine intelligence”? This talk proposes to start a debate that can be firstly related to the impressive development of intelligent machines and the effect of this development on human intelligence. Some issues are presented and questions are asked to focus on solutions and guidance from and to intelligence developers to think on the first hand about developing tools for more efficient intelligent machines and in the second hand on tools to assist people to be more intelligent.

It's time is to ask; Should we have an ethical frontiers from and to the human intelligence in developing machine?

Plan:

- Introduction
- Intelligent Machine: Unfulfilled promises
- Intelligent Machine: Impressive development
- Machine vs. Human Intelligence: Where to stop?
- Human Intelligence "Lost"
- Machine Intelligence orientation and guidance
- Conclusions and debate

Talk 2: Why should we make human based intelligent machines Hybrid?

Abstract. Intelligence was permanently related to the human being and men considered themselves as the most intelligent element in the world. Therefore, man intelligence was the first source of inspiration to make intelligent machines.

If we focus on human decision making process, we can easily notice that it's always reflecting his experience (argued and not). Decision can be done respectively to different objectives (multi-objective), individually as well as in group (social behavior).

This talk speaks about neuro-fuzzy based systems that are presented as human based intelligent machines. The decision making process is tackled from the human brain process at the highest and the lowest level to do classification tasks. Therefore, we present different steps of the human decision making process and their corresponding concepts using neuro-fuzzy methods.

Some hybrid methods are presented to resolve architectural and adaptive problems and a parallel study is made with the original human brain model to understand the necessity of using such hybridization in the intelligent machine design process.
Certainly, hybrid systems are very helpful to integrate multiple aspects of various intelligent machines to provide more and more efficient machines.

However, we concluded that in the human based intelligent machines, our mis-understanding of the human intelligence optimal method requires us to use hybrid systems to fill the gap and perform as well as humans.

Plan:
- Introduction
- Social Decision
- Multi-objective Decision
- Structured Individual decision
- Structure identification (Feature effect and Data effect)
- Structure optimization
- Structure continues adaptation
- Conclusions and perspectives

Biography. Tarek M. Hamdani (SM’13) was born in Tunis, Tunisia, in 1979. He received the Ph.D. degree in 2011 and his M.S. degree in 2003, in Computer Science Engineering from the University of the Sfax, Tunisia. He is currently pursuing the PostDoc. degree in Computer Science Engineering in the National School of Engineers, Sfax, Tunisia. He is teaching computer science at the Taibah University since 2012 as an Assistant professor, and was teaching at the University of Monastir and the University of Sfax since 2003. He focuses his research on intelligent pattern recognition, learning, and analysis of large scale complex systems. His research interest includes applications of intelligent methods, neural networks, fuzzy logic, and genetic algorithms to pattern recognition. He is a Reviewer of the Neural Networks, IEEE Transactions on, Pattern Recognition Letters, the Neurocomputing journal, the Soft Computing journal and others. He is an IEEE member of CIS and SMC societies.