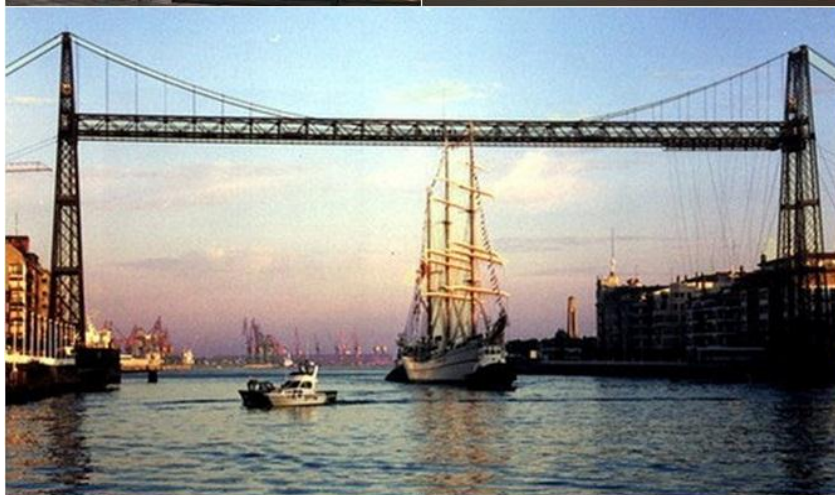# IEEE International Symposium on Signal Processing and Information Technology (ISSPIT)

December 14-17, 2011 - Bilbao – Spain
PROGRAM

ISSPIT 2011
Bilbao, Spain

Universidad de Deusto

Auditorium
Edificio de la Comercial

Avda/Universidades 24. 48007 Bilbao. Spain

Registration

Wednesday, December 14th:	18:00-19:30: Registration
DAY 1: Thursday, December 15th:	8.30 – 13.30: Registration
DAY 2: Friday, December 16th:	9:00 – 14.00: Registration

Organizers

General Co-Chairs

Adel Elmaghraby
University of Louisville
United States

Dimitrios Serpanos
University of Patras and ISI/RC ATHENA
Greece

Technical Program Co-chairs (SP & IT)

Begoña García Zapirain
University of Deusto
Bilbao, Spain

Christos Douligeris
University of Piraeus
Greece

Registration and Finance Chair

Reda Ammar
University of Connecticut
USA

Publication Chair

Yehia Khalil
University of Louisville
USA

Local Arrangements Team

Chair: Begoña García Zapirain
Technical Programs: Ibon Ruiz Oleagordia,
                            John O' Toole
Web Master: Javier Vicente
Social Events: Amaia Mendez Zorrilla

University of Deusto
DeustoTech-LIFE Unit
Bilbao, Spain

Technical program: Synopsis

Wednesday, December 14th

Time	Room 1 (Auditorium, Level 0)
18:00-19:30	Registration and Welcome Reception

DAY 1: Thursday, December 15th

Time	Room 1 (Auditorium, Level 0)	Room 2 (N°26, Level 2)	Poster Room (Level 0)
8:45-9:00	Welcome address		
9:00-10:00	PLENARY talk: Dr. Yufeng Zheng		
10:00-11:00	[O.DA] Data Analysis	[O.DS] Digital Security	
11:00-11:30	Coffee Break		[P.IPI] Image Processing I
11:30-12:00			[P.IPI] Image Processing I
12:00-13:00	[O.NT] Networking Theory	[O.RR] Radar and Remote Sensing	
13:00-14:30	Lunch		
14:30-16:00	[O.SPI] Speech Processing I	[O.IPII] Image Processing II	
16:00-16:30	Coffee Break		[P.BS] Biomedical Signals and eHealth
16:30-18:00	[O.SPII] Speech Processing II		[P.BS] Biomedical Signals and eHealth
20:30-00:00	Gala Dinner		

DAY 2: Friday, December 16th

Time	Room 1 (Auditorium, Level 0)	Room 2 (26, Level 2)	Poster Room (Level 0)
9:00-10:00	PLENARY talk: Prof. Boualem Boashash		
10:00-11:00	[O.SS] Sparse Signals	[O.SN] Sensor Networks	
11:00-11:30	Coffee Break		[P.CI] Communications I
11:30-12:00			
12:00-13:00	[O.OPIII] Image Processing III	[O.SP] Signal Processing Methods	
13:00-14:30	Lunch		
14:30-16:00	[O.IT] Information Technology	[O.CII] Communication II	
16:00-16:30	Coffee Break		[P.D] Detection
16:30-18:00	[O.AP] Audio Processing	[O.DW] Digital Watermarking	

DAY 3: Saturday, December 17th

Time	Room 1
9:30-11:30	ISSPIT committee meeting
11:30-12:00	Coffee Break

Map
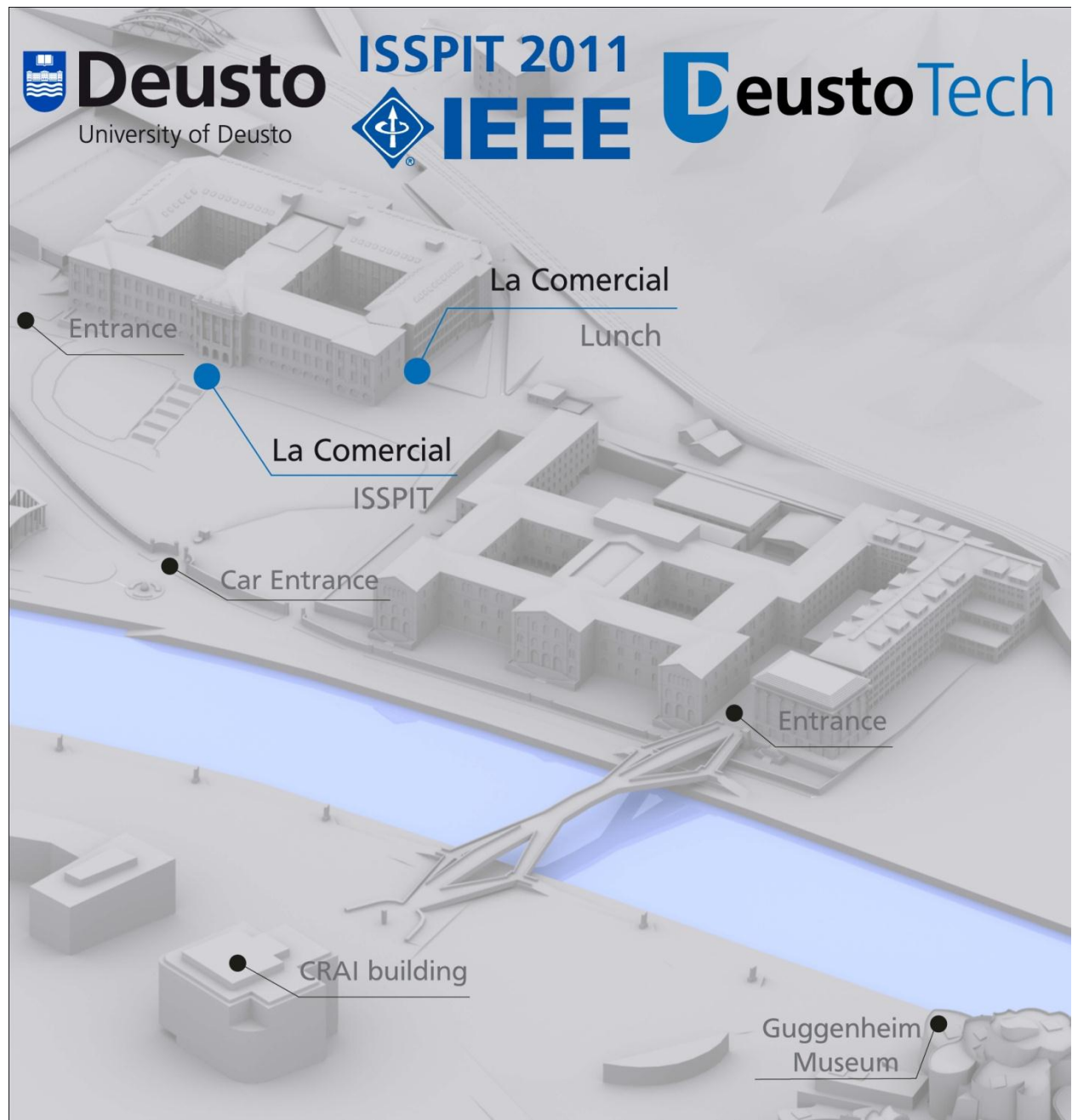
La Comercial (Auditorium, Room 26, and Poster Room)

LEVEL 0

POSTER ROOM

AUDITORIUM

ENTRANCE
REGISTRATION

TO LUNCH ROOM

LEVEL 2

ROOM 26
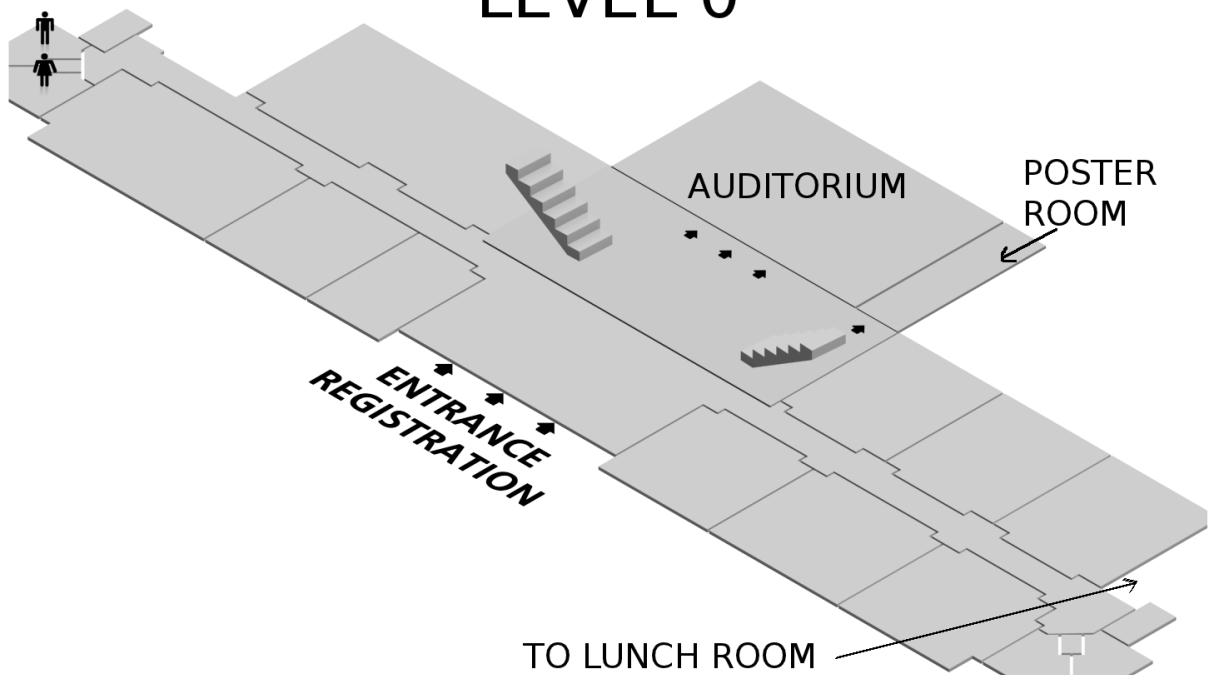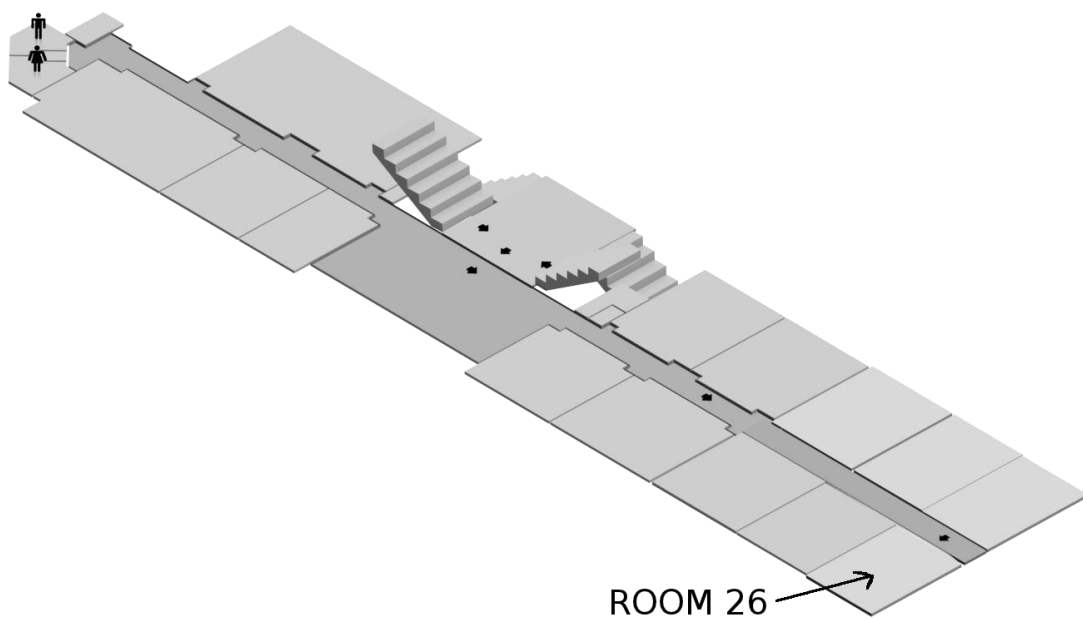
Technical program: Schedule

DAY 1: Thursday, December 15th

Room 1 (Auditorium, Level 0)

Plenary Talk I: *A Brief Survey on Multispectral Face Recognition and Multimodal Score Fusion*

Dr. Yufeng Zheng, Department of Advanced Technologies, Alcorn State University, USA

Biography: Dr. Yufeng Zheng teaches undergraduate and graduate courses in Computer Networking and in Computer Science at Alcorn State University. He is a Cisco Certified Network Professional (CCNP). His recent research activities focus on multisensory image fusion and night-vision colorization (funded by DOD ARO), and thermal face recognition (funded by DHS). He has made significant contributions to research work in breast cancer detection, landmine detection, glaucoma detection, and CT imaging. Before this appointment he was a Postdoc/Sr. Research Associate with Computer Engineering and Computer Science Dept. at University of Louisville (Louisville , KY). His research interests include pattern recognition, bioinspired image analysis, biometrics, computer-aided diagnosis, information fusion, and computer vision.

[O.DA] Session: Data Analysis, 10:00 – 11:00 (**Room 1**)
Session Chair: Dimitrios Serpanos

Title	Authors
Improving N-Finder Technique for Extracting Endmembers	Mahmoud Maghraby, Reda Ammar and Sanguthevar Rajasekaran.
A Correlation-Based Algorithm for Classifying Technical Articles	Rania M. Kilany, Reda A. Ammar and Sanguthevar Rajasekaran.
Wavelet Transform for the analysis of EEG signals in patients with oral communications problems	Maria Viqueira, Begoña Garcia Zapirain and Amaia Mendez.
Dynamic Transmission of 3D mesh in Wireless Walkthrough Applications	Ghada M.Fathy, Hanan A.Hassen, RehabG El-saide and Walaa M.Sheta.

[O.NTA] Session: Networking Theory and Applications, 12:00-13:00 (Room 1)
Session Chair: Christos Douligeris

Title	Authors
Criteria for Performance Improvement in Metropolitan Area WDM Ring Networks	Peristera A. Baziana and Ioannis E. Pountourakis.
Performance Analysis of Basic Tree Protocols And ALOHA-based Anti-collision Algorithms Used in RFID systems	Hadjer Saadi, Rachida Touhami and Mustapha Ce Yagoub.
Simulation of the Anti-collision Process of RFID System Based on Multiple Access Protocols Modeling	Hadjer Saadi, Rachida Touhami and Mustapha Ce Yagoub.
Dual-Lattice-Aided MIMO Detection for Slow Fading Channels	Francisco A. Monteiro and Ian J. Wassell.
An Interactive City Framework: Mobile Cloud Computing Approach	Heba M.Abd El Aty, Hanan A. Hassan and Walaa M. Sheta.

[O.SPI] Session: Speech Processing I, 14:30-16:00 (Room 1)
Session Chair: TBA

Title	Authors
Acoustic Analysis of Czech Expressive Recordings from a Single Speaker in Terms of Various Communicative Functions	Martin Gruber.
Exponentiated Enhancement for Fundamental Frequency Extraction of Noisy Speech	Masatoshi Narita and Tetsuya Shimamura.
Semi-Blind Speech Extraction for Robot Using Visual Information and Noise Statistics	Hiroshi Saruwatari, Nobuhisa Hirata,Toshiyuki Hatta, Ryo Wakisaka, Kiyohiro Shikano and Tomoya Takatani.
Support Vector Machines with the Priorities Method for Speaker Independent Phoneme Recognition	Michelle Cutajar, Edward Gatt, Ivan Grech, Owen Casha and Joseph Micallef.

[O.SPII] Session: Speech Processing II, 16:30-18:00 (**Room 1**)
Session Chair: Hiroshi Saruwatari

Title	Authors
An Improved β-order WEDM Spectral Amplitude Estimator for Speech Enhancement	Na Li, Changchun Bao, Bingyin Xia and Feng Deng.
Quantifying Parameters of a Source-Filter Model for Oesophageal Speech	John M. O' Toole and Begoña Garcia.
An Embedded Stereo Speech and Audio Coding Method Based on Principal Component Analysis	Maoshen Jia, Changchun Bao, Xin Liu, Xiaoming Li and Ruwei Li.
Compressed Domain Speech Enhancement based on the Joint Modification of Codebook Gains	Bing-yin Xia, Chang-chun Bao, Yan Liang,Xuan Zhou, Yu-wen He and Ru-wei Li.

Room 2 (Room n°26, Level 2)

[O.DS] Session: Digital Security, 10:00-11:00 (**Room 2**)
Session Chair: Ahmed Desoky

Title	Authors
CSA-based Design of Feedforward Scalable Montgomery Modular Multiplier	Tao Wu, Shuguo Li and Litian Liu.
Content-based Image Copy Detection Using Dual Signatures	Nadia Baaziz and Maxime Guinin.
Bitwise Hill Crypto System	Ahmed H. Desoky and Anju P. Madhusoodhanan.

[O.RRS] Session: Radar and Remote Sensing, 12:00-13:00 (**Room 2**)
Session Chair: Boualem Boashash

Title	Authors
Some results on low resolution airborne ultrasonic image generation and processing	Dorel Aiordachioaie and Laurentiu Frangu.
A Time Frequency Approach to CFAR Detection	Siamak Layeghy, Maryam Odabaee, Mohamed S. Khlif and Hamid R. Amindavar.
On The Automatic Prediction of PM10 with In-Situ Measurements, Satellite AOT Retrievals and Ancillary Data	Piero Campalani, Thi Nhat Thanh Nguyen, Simone Mantovani and Gianluca Mazzini.
Aerial Image Classification Using Structural Texture Similarity	Vladimir Risojević and Zdenka Babić.
Parallel Processing Techniques for the Processing of Synthetic Aperture Radar Data on GPUs	William H. Chapman, Sanjay Ranka, Sartaj Sahni, Mark Schmalz, Uttam Majumder and Linda Moore.
Validation of Support Vector Regression in Deriving Aerosol Optical Thickness Maps at 1x1 km2 of Spatial Resolution from Satellite Observations	Thi Nhat Thanh Nguyen, Simone Mantovani and Piero Campalani.

[O.IPII] Session: Image Processing II, 14:30-16:00 (Room 2)
Session Chair: Iker Gondra

Title	Authors
Enhanced Fuzzy-based Models for ROI Regions Extraction in Medical Images	Yasser El-Sonbaty, Sherin M. Youssef and Karma M. Fathalla.
Blue-white veil and dark-red patch of pigment pattern recognition in dermoscopic images using machine-learning techniques	Jose Luis García Arroyo, Begoña García Zapirain, Amaia Méndez Zorrilla, Ibon Ruiz Oleagordia.
Multifractal Analysis of Blood Oxygen Level Dependent Functional Magnetic Resonance Imaging	Catarina Runa Miranda, Filipe Soares, Inês Sousa, Filipe Janela and Mário Forjaz Secca.
A Bayesian Network-Based Tunable Image Segmentation Algorithm for Object Recognition	Fahim I.Alam and Iker Gondra.
Watershed regions and watershed lines based cooperation strategy for image segmentation. Application to roof detection	Youssef El Merabet, Cyril Meurie, Yassine Ruichek, Abderrahmane Sbihi and Rajaa Touahni.
Motion Estimation in Real Deformation Processes Based on Block-Matching Techniques	Alvaro Rodriguez, Carlos Fernandez-Lozano, Jose-Antonio Seoane, Juan R. Rabuñal and Julian Dorado.
A new image quality estimation approach for JPEG2000 compressed images	Aladine Chetouani, Azeddine Beghdadi

Poster Room (Next to the Auditorium, Level 0)

[P.IPI] Session: Image Processing I, 11:00-13:00 (Poster Room)

Title	Authors
With shadow elimination towards effective foreground extraction	Stefan Badura, Anton Lieskovsky and Michal Mokrys.
Measuring Shape Rectangularities	Carlos Martinez-Ortiz, Dragisa Zunic and Jovisa Zunic.
Color Image Encryption through a Novel Chess Based Confusion Scheme using Chaotic Map	Rohit A. Joshi and Sumit S. Joshi.
A Robust Shadow and Light Region Detection using Within-Class Variance in Face Images	Tuan Anh Tran and Kim Young Jin.
No-Reference Image Semantic Quality Approach Using Neural Network	Sonia Ouni, Ezzeddine Zagrouba, Majed Chambah and Michel Herbin.
R θ -signature: a new signature based on Radon Transform and its application in buildings extraction	Atef Hamouda, Hmida Rojbani and Ines Elouedi.

[P.BS] Session: Biomedical Signals and e-Health, 16:00-18:00 (**Poster Room**)

Title	Authors
Time-Frequency Characterization of Tri-Axial Accelerometer Data for Fetal Movement Detection	Mohamed S. Khlif, Boualem Boashash,Siamak Layeghy, Mostefa Mesbah, Christine East and Paul Colditz.
K-NN Based Interpolation to Handle Artifacts for Heart Rate Variability Analysis	Shahina Begum, Mohd. Siblee Islam, Mobyen U. Ahmed and Peter Funk.
Mining Rare Cases in Post-Operative Pain by Means of Outlier Detection	Mobyen U. Ahmed and Peter Funk.
Benchmarking the Performance of SVMs and HMMs of Accelerometer-Based Biometric Gait Recognition	Claudia Nickel, Holger Brandt and Christoph Busch.
Statistical Analysis of Parkinson Disease Gait Classification using Artificial Neural Network	Nooritawati Md Tahir, Hany Hazfiza Manap and Ahmad Ihsan M.Yassin.
Vocal Folds Paralysis Detection using an Adapted Block Matching Algorithm	Amaia Mendez Zorrilla, Eneko Lopetegui and Begoña García Zapirain.
Disparity Energy Model Using a Trained Neuronal Population	Jaime A Martins, João Rodrigues, Hans du Buf

DAY 2: Friday, December 16th

Room 1 (Auditorium, Level 0)

Plenary Talk II: *Extracting more information from a signal using a time-frequency approach for applications in signal analysis, detection, classification and localization with illustration on EEG signals*

Prof. Boualem Boashash, Qatar University, Qatar, and The University of Queensland, Australia

Biography: Prof. Boualem Boashash received the Award of Fellow of the IEEE for "pioneering contributions to time-frequency signal analysis and signal processing education." He got the Diplome d'ingenieur Physique-Electronique from the ICPI, Lyon, France, in 1978. He received a DEA (Master's degree) in 1979 and Docteur-Ing´enieur in 1982 from the Institut National Polytechnique de Grenoble, France. During the period 1979–1982, he was with Elf-Aquitaine Geophysical Research Centre, Pau, France. In 1982, he joined the Institut National des Sciences Appliquees de Lyon, Lyon, France, as a Senior Lecturer. In 1984, he joined the EE Department of the University of Queensland, Australia, as a Lecturer, Senior Lecturer (1986), and Reader (1989). In 1990, he joined Bond University as a Professor of signal processing. In 1991, he moved to the Queensland University of Technology as the Foundation Professor of Signal Processing and Foundation Director of the Signal Processing Research Centre. From 2006-2009 he was Dean of the College of Engineering, University of Sharjah, UAE. He joined Qatar University in Qatar in 2009 as associate academic Dean. He is also adjunct Professor at the Centre for Clinical Research, in The University of Queensland, Australia.

He has published over four hundred technical publications, three books, 30 book chapters, and 3 textbooks and supervised 50 Ph.D. students. Professor Boashash was the Technical Chairman of ICASSP 94. Since 1985, he has been the General Chairman and then Chairman of Steering Committee of the International Symposium on Signal Processing and its Applications (ISSPA) organized every two years. Professor Boashash's research interests include: time-frequency signal analysis, spectral estimation, signal detection and classification, higher-order spectra, and biomedical signal processing. He is also interested in wider issues such as the effect of engineering developments on society.

[O.SS] Session: Sparse Signals, 10:00-11:00 (Room 1)
Session Chair: Alessandro Adamo

Title	Authors
A Fixed-Point Iterative Schema for Error Minimization in k-Sparse Decomposition	A. Adamo and G.Grossi.
Sparsity Recovery by Iterative Orthogonal Projections of Nonlinear Mappings	A. Adamo and G.Grossi.
Performance of Unknown and Arbitrary Sparse Signal Detection using Convex Programming Method with Compressive Measurements	Chuan Lei, Jun Zhang and Qiang Gao.

[O.IPIII] Session: Image Processing III, 12:00-13:00 (Room 1)
Session Chair: Iker Gondra

Title	Authors
Applying Integrated Nested Laplace Approximation to the Superresolution Problem	Marcelo O. Camponez, Mário Sarcinelli-Filho and Evandro O. T. Salles.
A Texture Based Image Retrieval Approach Using Self-Organizing Map Pre-Classification	Mostafa Rahimi and Mohsen Ebrahimi Moghadam.
Animated Depth Employing Image Synthesis for 3D Security X-ray Imaging	Omar Abusaeeda, Paul Evans and David Downes.
Iterative blocking artifact reduction based on local contrast information	Amina Saleem, Azeddine Beghdadi and Boualem Boashash.
An interactive super resolution coding approach of images and videos for enhanced user visualization	Gamal E. Fahmy.
EM algorithm of spherical models for binned data	Hani Hamdan and Jingwen Wu.
Mammography Analysis Using A Soft Perceptual Segmentation Approach	Daikha Cherifi, Azeddine Beghdadi, Patrick Vlaris de lesegno and Ahmed H. Belbachir.

[O.IT] Session: Information Technology, 14:30-16:00 (Room 1)
Session Chair: Christos Douligeris

Title	Authors
A tailor-made development for time domain data series pre-processing in the power industry	Juan J. Gude, Luis Vazquez Seisdedos and David Diaz Martinez.
Achieving the Workload Balance of the Clusters	Reda Ammar, Al sayed Sallam, Amany Sarhan and Hebat-Allah Ragab.
Computed Tomography CAD system for monitoring and modeling the evolution of lung cancer nodule	Ivan Ornes, Jose Luis García, Begoña García Zapirain and Amaia Méndez Zorrilla.
Analysis for effective approaches towards generating of artificial neuron structures	Stefan Badura.
On designing optimal control systems through genetic and neuro-fuzzy techniques	Danilo Pelusi.
EWMA based approaches for automated building energy analysis	Carlos A Martinez-Ortiz, Martin Beck and Pieter De Wilde.

[O.AP] Session: Audio Processing, 16:30-18:00 (Room 1)
Session Chair: TBA

Title	Authors
A Robust Characterization of Audio Signals Using the Level of Information Content per Chroma	Alain Manzo Martinez and Jose A. Camarena Ibarrola.
A Restoration Method of the Clipped Audio Signals based on MDCT	Dawei Zhang, Changchun Bao, Feng Deng, Bingyin Xia and Hao Chen.
Nonlinear Bandwidth Extension of Audio Signals based on Hidden Markov Model	Xin Liu, Changchun Bao, Liyan Zhang, Xingtao Zhang, Feng Bao and Bing Bu.
Audio Bandwidth Extension based on RBF Neural Network	Haojie Liu, Changchun Bao, Xin Liu, Xingtao Zhang and Liyan Zhang.
Implementation of a matching engine for a practical query-by-singing/humming system	Dalwon Jang, Chai-Jong Song, Saim Shin, Sung-Joo Park, Sei-Jin Jang and Seok-Pil Lee.

Room 2 (Room nº 26, Level 2)

[O.SN] Session: Sensor Networks, 10:00-11:00 (Room 2)
Session Chair: Ayman Assra

Title	Authors
On the Application of the Expectation-Maximization Algorithm to the Relative Grid-Locking Problem	Stefano Fortunati, Fulvio Gini, Maria S. Greco, Alfonso Farina, Antonio Graziano and Sofia Giompapa.
Target Classification based on Sensor Fusion in Multi-Channel Seismic Network	Mussab Zubair.
Hierarchical Underwater Acoustic Sensor Networks with (virtual) Transmit/Receive Arrays	Andrej Stefanov and Milica Stojanovic.

[O.SP] Session: Signal Processing Methods, 12:00-13:00 (Room 2)
Session Chair: Stephan Weiss

Title	Authors
An approximate polynomial matrix eigenvalue decomposition algorithm for para-hermitian matrices	Soydan Redif, Stephan Weiss and John G. McWhirter.
Blind Source Separation of Nondisjoint Sources in The Time-Frequency Domain with Model-Based Determination of Source Contribution	Jalil Taghia, Timo Gerkmann and Arne Leijon.
Multicriteria Design of Digital Filter with Evolutionary Optimization	Krzysztof Walczak.
Efficient Computation of Prolate Spheroidal Wave Functions in Radio Astronomical Source Modeling	Parisa Noorishad and Sarod Yatawatta.
Comparing Different Approaches for Model Parameters Identification in Short Time	Linghan Li, Bastian Kanning, Christian Schenck, and Bernd Kuhfuss

[O.CII] Session: Communication II, 14:30-16:00 (Room 2)
Session Chair: Ali Dziri

Title	Authors
Greedy Algorithms for Sparse Adaptive Decision Feedback Equalization	Aris S.Lalos, Evangelos Vlachos, Kostas Berberidis and Athanasios A. Rontogiannis.
Channel Estimation and Tracking for Closed Loop EO-STBC with Differentially Encoding Feedback	Mohamed N. Hussin and Stephan Weiss.
Closed Form of Performance Analysis of Decode and Forward Relaying over the Generalized-K Channels	Ali Dziri, Didier Le Ruyet, Daniel Roviras and Michel Terre.
Improving Performance of Reed-Solomon Decoder by Error/Erasure Correction	Kyungsu Ko, Ilhyuk Oh, Dongkuk Ko and Byung G. Jung.
Fingerprinting Localization based on Neural Networks and Ultra-wideband signals	Lei Yu, Mohamed Laaraiedh, Stéphane Avrillon and Bernard Uguen.

[O.DW] Session: Digital Watermarking, 16:30-18:00 (Room 2)
Session Chair: Ahmed M. Al-Gindy

Title	Authors
A Content-Based Digital Image Watermarking Algorithm Robust Against JPEG Compression	Amir Najafi, Ali Iahkoohi and Mohammad Bagher Shamsollahi.
A Graphical User Interface Watermarking Technique for the Copyright protection of Colour Images using Colour Watermarks	Ahmed Mohd AL-Gindy.
Digital Watermarking Method based on Fuzzy Image Segmentation Technique	Methaq Gaata, William Puech and Sattar Sadkhn.
A Technique of Time Domain Sequential Data Embedding into Real Object Image Using Spatially Modulated Illumination	Yasunori Ishikawa, Kazutake Uehira and Kazuhisa Yanaka.

Poster Room (Next to the Auditorium, Level 0)

[P.CI] Session: Communications I, 11:00-13:00 (**Poster Room**)

Title	Authors
Multiuser MIMO Amplify-and-Forward Relaying Schemes with Vector Precoding	Idoia Jimenez, Stephan Weiss, Mikel Mendicute and Egoitz Arruti.
Iterative Joint Channel and Noise Variance Estimation and Primary User Signal Detection for Cognitive Radios	Ayman Assra, Arash Vakili and Benoit Champagne.
Low-Complexity LSMR Equalisation of FrFT-Based Multicarrier Systems in Doubly Dispersive Channels	Ahmed A. Solyman, Stephan Weiss and John J.Soraghan.
Peniel Method for the Ultrasonic Material Identification in Robots	Juan J.Gonzalez, Jovani A. Jimenez and Jaime A.Guzman
Cooperative Regions for Cooperative MTCM Systems	Andrej Stefanov and Priyanki Thakore.
CORDIC based Architecture for Blind CFO Estimation in OFDM Systems	Sedki Younis, Arafat Al-Dweik, Bayan Sharif, Charalampos Tsimenidis and Ali Hazmi.
Genetic Algorithm Implementation of Multi-User Detection in SDMA-OFDM-Systems	Mohammed Alansi, Ibrahim Elshafiey and Abdulhameed Al-Sanie.
The Effect of Timing Errors on Frequency Offset Estimation in OFDM Systems	S. Younis, A. Al-Dweik, C. Tsimenidis, B. Sharif and A. Hazmi.

[P.D] Session: Signal Detection, 16:00-18:00 (**Poster Room**)

Title	Authors
Fault Detection in Reciprocating Compressor Valves for Steady-State Load Conditions	Kurt Pichler, Andrea Schrems, Thomas Buchegger, Matthias Huschenbett and Markus Pichler.
A robust super-resolution approach with sparsity constraint for near-field wideband acoustic imaging	Ning Chu, José Picheral and Ali Mohammad Djafari.
A New Hypothesis Testing Based Technique for the Simultaneous Detection of Seismic Events	Vasilis Pikoulis and Emmanouil Psarakis.

Notes

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