

FINAL PROGRAM

Monday, May 28th

Morning

09:00 : Welcome Address

09:10 : Opening Address

- Minimum Classification Error vs. Maximum Margin: How Should We Penalize Unseen Samples?

Shigeru KATAGIRI (Doshisha Univ., Japan)

09:45 : Keynote Address

- Algorithms for Signal Reconstruction and Learning Under Sparsity and Structured Sparsity Regularization.

Mario A. T. FIGUEIREDO (IST Lisbon, Portugal)

10:20 : Session 1: Advanced Machine Learning

- Complex Support Vector Regression
P. BOUBULIS¹, S. THEODORIDIS¹, and C. MAVROFORAKIS²
(¹: Univ. of Athens, Greece; ²: Boston Univ., USA)
- Steady State MSE Analysis of Convexly Constrained Mixture Models
M. DOMMEZ and S. KOZAT
(Koc Univ., Turkey)
- Accelerating the Convergence of a Decision-based Algorithm for Blind Equalization of QAM Signals
J.M. FILHO, M. MIRANDA, and M. SILVA
(Univ. São Paulo, Brazil)
- Structured Sparsity Regularization Approach to the EEG Inverse Problems
J. MONTOYA-MARTÍNEZ¹, A. ARTÉS-RODRÍGUEZ¹, L. K. HANSEN², and M. PONTIL³
(¹: UCIIM, Spain; ² DTU, Denmark; ³ Univ. College London, UK)
- Semi-supervised Dictionary Learning for Network-wide Link Load Prediction
P. A. FORERO, K. RAJAWAT, and G. B. GIANNAKIS
(Univ. of Minnesota, USA)

11:35 : Coffee break

12:00 : Special Session 1: Collaborative and Distributed Signal Processing for Wireless Networks

Chair : Carlos ANTÓN-HARO (CTTC, Spain)

- Decentralized Detection with Energy-aware Greedy Selective Sensors
J. FERNÁNDEZ-BES and J. CID-SUEIRO
(UCIIM, Spain)
- Robust Estimation of Spatial Fields with Compressed Observations and Imperfect Phase Estimation in M2M Capillary Networks
J. MATAMOROS and C. ANTÓN-HARO
(CTTC, Spain)
- Joint Optimization of Sensing and Radio Resource Allocation in Collaborative Femtocell Networks
S. BARBAROSSA and S. SANDRELLI
(Univ. La Sapienza, Italy)
- Antennas Deployment Optimization in Coordinated Multipoint Processing with Local Beamforming
J. GAMBINI and U. SPAGNOLINI
(Politecnico di Milano, Italy)

13:00 : End of morning sessions

Afternoon /Evening

15:00 : IARP Invited Lecture

- Distributed vs. Centralized: The Role of Network
Jose M. F. MOURA (CMU, USA)

15:35 : Session 2: Distributed and Cooperative Processing

- Performance of Waterfilling-based Schemes for Interference Cancellation in 4G Networks
M. L. PABLO-GONZÁLEZ¹, A. GARCÍA-ARMADA², M. SÁNCHEZ-FERNÁNDEZ², A. PASCUAL-ISERTE³, and M. PAYARÓ⁴
(¹ : Telefónica I+D, Spain; ² : UCIIM, Spain; ³ : UPC, Spain; ⁴ : CTTC, Spain)
- Diffusion Gradient Temporal Difference for Cooperative Reinforcement Learning with Linear Function Approximation
S. VALCÁRCEL-MACUA, P. BELANOVIC, and S. ZAZO
(UPM, Spain)
- Clustering via Diffusion Adaption over Networks
X. ZHAO and A. SAYED
(UCLA, USA)
- Effective Information Flow over Mobile Adaptive Networks
S. -Y. TU and A. SAYED
(UCLA, USA)

16:35 : Break

16:45 : Special Session 2: Cognitive Radio

Co-chairs: Fernando PÉREZ- GONZÁLEZ and Carlos MOSQUERA (Univ. Vigo, Spain)

- Low Power Architecture for Wideband Spectrum Sensing
S. P. CHEPURI, R. DE FRANCISCO, and G. LEUS
(¹ : Delft Univ. of Technology, The Netherlands; ² : Holst Centre Eindhoven, The Netherlands)
- Overlay Cognitive Transmission in OFDM Point to Point Systems Exploiting Primary Feedback
A. RICO-ALVARIÑO and C. MOSQUERA
(Univ. de Vigo, Spain)
- Detection of Unknown Constant Magnitude Signals in Time-varying Channels
D. ROMERO and R. LÓPEZ-VALCARCE
(Univ. de Vigo, Spain)
- Licensing Open Spectrum Systems
M. A. VÁZQUEZ¹, A. PÉREZ^{1,2}, and M. A. LAGUNAS^{1,2}.
(¹ : CTTC, Spain; ² : UPC, Spain)
- Wideband PHY/MAC Bandwidth Aggregation Optimization for Cognitive Radios
Y. LI, S. JAYAWEERA and C. CHRISTODOULOU
(UNM, USA)
- A Cognitive Scheme for Radio Admission Control in LTE Systems
B. BOJOVIC, N. BALDO, and P. DINI
(CTTC, Spain)
- Correntropy-based Spectrum Sensing for Wireless Microphones in Man-made Noise Environments
J. LEE and J. C. PRINCIPE
(Univ. of Florida, USA)

18:30 : End of afternoon / evening sessions

Tuesday, May 29th

Morning

08:45 : Keynote Address

- Sleights of Mind: What the Neuroscience of Magic Reveals about Our Brains
Susana MARTINEZ-CONDE and Stephen L. MACKNIC (Barrow Neurological Inst., USA)

09:20 : Keynote Address

- Transfer Learning in a Heterogeneous Environment
Massimiliano PONTIL (Univ. College London, UK)

09:55 : Coffee Break

10:15 : Keynote Address

- Reverse Engineering of Integrated Circuits Using Machine Learning
Lior ROKACH (Ben Gurion Univ. at The Neguev, Israel)

10:50 : Session 3: Applications of Cognitive Signal Processing

- Stream Analytics for Utilities. Predicting Power Supply and Demand in a Smart Grid
M. COUCEIRO, R. FERRANDO, D. MANZANO, and L. LAFUENTE
(Ericsson Research Madrid, Spain)
- An Extended Perspective of Evidential Aggregation Rules in Machine Conditions Monitoring
U. MONKS, K. VOTH, and V. LOHWEG
(Ostwestfalen-Lippe Univ., Germany)
- Sparse Robust Matrix Tri-factorization with Application to Cancer Genomics
S. -J. KIM, T. HWANG, and G. GIANNAKIS
(Univ. of Minnesota, USA)
- Data-driven Approaches to Augment Clinical Decision in EMR Era
K. MANE¹, C. SCHMITT¹, P. OWEN¹, K. GERSING², and S. AHALT¹
(¹ : Univ. of North Carolina, USA; ² : Duke Univ., USA)
- Analysis of Ventricular Fibrillation Signals Using Feature Selection Methods
J. CARAVACA, A. J. SERRANO-LÓPEZ, E. SORIA-OLIVAS, P. ESCANDELL-MORENO, J. M. MARTINEZ-MARTINEZ, and J. F. GUERRERO-MARTÍNEZ
(Univ. of Valencia, Spain)
- Fundamental Frequency Estimation in Arterial Fibrillation Signals Using Correntropy and Fourier Organization Analysis
Ó. BARQUERO-PÉREZ¹, L. SÖRNMO², R. GOYA-ESTEBAN¹, I. MORA-JIMÉNEZ¹, A. GARCÍA-ALBEROLA³, and J. L. ROJO-ÁLVAREZ¹
(¹ : URJC, Spain; ² : Univ. of Lund, Sweden; ³ : Hospital Virgen de la Arrixaca, Spain)
- FMRI Brain Mapping with Kernels
M. MARTÍNEZ-RAMÓN¹, M. C. GOMEZ-VILELA¹, V. GÓMEZ-VERDEJO¹, and A. OLIVIERO²
(¹ : UCIIIIM, Spain; ² : H. N. Parapléjicos Toledo, Spain)

12.35 : End of morning sessions

Wednesday, May 30th

Morning

08:45 : Keynote Address

- Attention as a Machine Learning Problem
Lars-Kai HANSEN (DTU, Denmark)

09:20 : Session 4: Cognitive Modeling, Processing, Decision Making, and Human-Machine Interaction (Pt. 1)

- Cognitive Semantic Networks: Emotional Verbs Throw a Tantrum but Don't Bite
M. K. PETERSEN and L. -K. HANSEN
(DTU, Denmark)
- Investigating and Modeling the Effects of Cognitive Factors on Multisensory Perception Using Skin Conductance
P. BESSON, L. BRINGOUX, S. GIRAUD, and C. BOURDIN
(CNRS and Aix Marseille Univ., France)
- Detecting Hierarchical Structure in Networks
T. HERLAU, M. MØRUP, M. SCHMIDT, and L. -K. HANSEN
(DTU, Denmark)
- Human Activity Recognition Using Inertial Sensors with Invariance to Sensor Orientation
B. FLORENTINO-LIAÑO, N. O'MAHONY, and A. ARTÉS-RODRÍGUEZ
(UCIIM, Spain)

10:20 : Coffee break

10:45 : Session 4: Cognitive Modeling, Processing, Decision Making, and Human-Machine Interaction (Pt. 2)

- An Adversarial Risk Analysis Model for a Decision Agent Facing Multiple Users
P. GÓMEZ-ESTEBAN¹, J. F. GUERRERO-RÁZURI¹, and D. RÍOS-INSUA²
(¹ : URJC, Spain; ² : Royal Academy of Sciences, Spain)
- A Game-theoretic Chip-fire Classifier
C. VINEYARD^{1,2}, G. HEILEMAN¹, S. VERZI^{1,2}, and R. JORDAN¹
(¹ : UNM, USA; ² : Sandia National Labs., USA)
- Pattern Discovery Using Semantic Network Analysis
R. BURK, A. CHAPPELL, M. GREGORY, C. JOSYLIN, and L. MCGRATH
(¹ : Batelle Memorial Institute, USA; ² : Pacific Northwestern National Lab., USA)
- Combined-order Hidden Markov Models for Reverberation-robust Speech Recognition
R. MAAS, S. KOTHA, A. SEHR, and W. KELLERMANN
(Univ. of Erlangen-Nuremberg, Germany)

11:45 : Special Session 3: Cognitive Audio Modeling and Crowd Sourcing

Co-Chairs: Jan LARSEN (DTU, Denmark) and Jerónimo ARENAS-GARCÍA (UCIIM, Spain)

- Characterization of the Freesound Online Community
F. FONT, G. ROMA, P. HERRERA, and X. SERRA
(Univ. Pompeu Fabra, Spain)
- Towards Lyrics Spotting in the SyncGlobal Project
C. DITTMAR, P. MERCADO, H. GROSSMAN, and E. CANO
(Freunhofer Inst. Digital Media Technology, Germany)

- Cognitive Music Modelling: An Information Dynamics Approach
S.A. ABDALLAH, H. EKEUS, P.A. FOSTER, A. ROBERTSON, and M.D. PLUMBIEY
(Queen Mary Univ. of London, UK)

12:45 : End of morning sessions

Afternoon/Evening

14:45 : Session 5: Cognitive Communications, Radar, Surveillance, and Navigation

- A New Method for Text Page Up/Down Orientation Detection Based on Punctuation Marks
M. ZHU, Y. LIAO, and X. DENG
(East China Normal Univ., China)
- Signal Detection and Parameter Estimation for Space Surveillance Based on Sparse Reconstruction
J. HUANG, W. HU, X. DU, and B. GONG
(National Univ. of Defense Technology, China)
- A Novel Sequential Bayesian Approach to GPS Acquisition
N. O'MAHONY and F. PÉREZ-CRUZ
(UCIIM, Spain)
- Joint Power Allocation and Spectrum Sensing Algorithm for Spectrum Efficiency Maximization in Ultra Wideband Cognitive Radio System
L. ZHENG¹ and S. MCGRATH²
(¹ : Univ. of Electronic Science and Technology of Chandu, China; ² :Univ. of Limerick, Ireland)
- A Decision-Aided Channel Estimation Strategy for the IEEE 802.11p Standard
A. DAPENA, T.M. FERNÁNDEZ-CARAMÉS, J. A. GARCÍA-NAYA, and L. CASTEDO
(Univ. da Coruña, Spain)
- The ETSI BRAN 1Gbps/km² Cost-efficient Cognitive Communications Architecture
P. BLASCO and M. DOHLER
(CTTC, Spain)

16:15 : Break

16:30: Session 6: Information Mining

- Combining Semantics and Acoustic Features for Valence and Arousal Recognition of Speech
S.G. KARADOĞAN and J. LARSEN
(DTU, Denmark)
- A Novel Training Method for PHMMs
H. OZKAN¹, A. AKMAN², S. ERGÜT³, and S.S. KOZAT¹
(¹ : Koc Univ. , Turkey; ² : Turk Telekom Group R&D Ankara, Turkey; ³ : AveaLabs Istanbul, Turkey)
- A Hold-out Method to Correct PCA Variance Inflation

P. GARCÍA-MORENO¹, A. ARTÉS-RODRÍGUEZ¹, and L. -K. HANSEN²
(¹: UCIIM, Spain; ²: DTU, Denmark)

17:15 : Closing Ceremony

17:30 : End of the workshop