# FINAL PROGRAM

10th International Conference on Engineering Applications on Neural Networks (EANN)
29-31 August 2007, Thessaloniki, Greece

## The program in a glance

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Conference Sessions

Plenary Session 1: Invited Talk
Chair: Konstantinos Margaritis
Modal Learning in Neural Networks
Dominic Palmer-Brown

Plenary Session 2: Invited Talk
Chair: Nick Bassiliades
Towards Knowledge-based Neural Networks: at the Junction of Fuzzy Sets and Neurocomputing
Witold Pedrycz

Plenary Session 3: Invited Talk
Chair: Pantelis Angelidis
Applying PCA Neural Models for the Blind Separation of Signals
Konstantinos Diamantaras

Session 1: Monitoring and Diagnosis
Chair: Lazaros Iliadis
- Artificial Neural Networks for the Non Destructive Diagnosis of Concrete Structures
  Barbara Cannas, Sara Carcangiu, Francesca Cau, Giovanna Concu, Alessandra Fanni, Pietro Testoni, Mariangela Usai
- Measures of Topological Relevance on the Self-Organizing Map: an Application to Spectrophotoscopic Modeling
  Francesco Corona, Elia Liitiäinen, Amaury Lendasse, Roberto Baratti
- Local Anomaly Detection for Network System Log Monitoring
  Pekka Kumpulainen, Kimmo Hätönen
- Dynamic Neural Networks for Prediction of Disruptions in Fusion Reactors
  Augusto Montisci, Gabriele Murgia, M.Katiuscia Zedda, Alessandra Fanni, Barbara Cannas, Piergiorgio Sonato

Session 2: Production Scheduling and Control
Chair: Stephanos Spartalis
- Prediction of Distillate Yields in a Visbreaking Process by Neural Networks
  Ombretta Foddi, Massimiliano Grosso, Stefania Tronci, Roberto Baratti
- Application of Reinforcement Learning for the Generation of an Assembly Plant Entry Control Policy
  Evangelos Kehris, Dimitrios Dranidis
• Neural Network Based Product Formulation Models: Early Stopping Saves Training Time
  Aaron Owens
• Neural Network Thermal Model of a Ladle Furnace
  Patricia Sampaio, Antonio Braga, Takeshi Fujii

**Session 3: Non Linear Systems Modelling**  
**Chair:** Aaron Owens
• Alternative Dynamic Network Structures for Non-linear System Modeling
  Konstantinos Dimopoulos, Chandra Kambhampati
• Dimensionality Reduction Through Unsupervised Features Selection
  Sébastien Guérif, Younès Bennani
• Solving Nonlinear Algebraic Systems Using Artificial Neural Networks
  Athanasios Margaris, Miltiadis Adamopoulos

**Session 4: Medical Diagnosis Intelligent Systems**  
**Chair:** Roberto Baratti
• Breast Cancer Diagnostic Factors Elimination via Evolutionary Neural Network Pruning
  Adam Adamopoulos
• Abdominal Pain Estimation in Childhood based on Artificial Neural Network Classification
  Dimitrios Mantzaris, George Anastassopoulos, Adam Adamopoulos, Ioannis Stephanakis, Katerina Kambouri, Stefanos Gardikis
• A Knowledge-Based Artificial Neural Network for Pulmonary Embolism Diagnosis: Development and Conceptual Aspects
  Gursel Serpen, Dilip Tekkedil

**Session 5: Biomedical Engineering**  
**Chair:** Adam Adamopoulos
• Application of a New Algorithm, Iterative SOM, to the Detection of Gene Expressions
  Marcos Lévano, Hans Nowak
• Hearing Aid System Using Basilar Hardware Membrane Model
  Yoko Takase, Yugo Hayashi, Yoshifumi Sekine
• An Artificial Neural Network Model Simulating the Milk-ejection Reflex in the Sheep
  Anastasia Tsingotjidou, Lazaros Iliadis, Efstratios Kosmidis, Christos Batzios, Georgios Papadopoulos
Session 6: Financial Forecasting
Chair: George Anastassopoulos
- A Hybrid Artificial Intelligence Approach to Monthly Forecasting of Crude Oil Price Time Series
  Mohammad Reza Amin-Naseri, Ehsan Ahmadi Gharacheh
- Modelling of Municipal Creditworthiness by Clustering Methods
  Petr Hájek, Vladimír Olej
- Weather Derivatives Pricing: Modeling the Seasonal Residual Variance of an Ornstein-Uhlenbeck Temperature Process with Neural Networks
  Achilleas Zapranis, Antonis Alexandridis

Session 7: General Engineering Prediction and Modelling
Chair: Alessandra Fanni
- Functional Networks as a Novel Approach for Prediction of Permeability in a Carbonate Reservoir
  Emad El-Sebakhy, Abdul Azeez Abdulraheem, Mujahed Ahmed, Mohammed Rafiqul Awal
- Using Neural Networks for Predicting the Likelihood of Interference to Groundwave Users in the HF Spectrum
  Haris Haralambous, Harris Papadopoulos, Lefteris Economou
- Application Methods for Self Organizing Map in Process Imaging for Dynamic Behavior of Aerated Agitation Vessel
  Hideyuki Matsumoto, Ryuichi Masumoto, Chiaki Kuroda

Session 8: Data Mining
Chair: Ioannis Vlahavas
- Text Correction Using Approaches Based on Markovian Architectural Bias
  Michal Čerňanský, Matej Makula, Peter Trebatícký, Peter Lacko
- Hybrid Approach to Data Mining Radiological Medical Records
  William Claster, Subana Shanmuganathan, Nader Ghotbi
- Updating of Road Network Databases: Spatio-temporal Trajectory Grouping Using Snap-Drift Neural Network
  Frank Ekpenyong, Dominic Palmer-Brown, Allan Brimicombe

Session 9: Adaptive Control
Chair: Grigoris Tsoumakas
- Snap-drift ADaptive FUnction Neural Network (SADFUNN) for Pen-Based Recognition of Handwritten Digits
  Miao Kang, Palmer-Brown Dominic
- Feed Forward Control of L-Methionine Using Sequential Adaptive Networks
  Rajib Nayak, James Gomes
• Aerosol Optical Depth Retrieval by Neural Networks Ensemble with Adaptive Cost Function
  
  *Vladan Radosavljevic, Slobodan Vucetic, Zoran Obradovic*

**Session 10: General Engineering Identification, Classification and Control**

**Chair:** Barbara Cannas

• Regional Day Type Identification For Algerian Electricity Load Using Kohonan Map
  
  *Farouk Benabbas, Mohamed Tarek Khadir, Damien Fay, Ahmed Boughrira*

• Combining Experimental Data and Physical Simulation Models in Support Vector Learning
  
  *Gérard Bloch, Fabien Lauer, Guillaume Colin, Yann Chamaillard*

• Development of Tools for Monitorization and Control of Multivariable Neurocontrolled Systems with Application to Distillation Columns
  
  *J. Fernandez de Canete, S. Gonzalez-Perez, P. Del Saz Orozco*

• Identification of Aircraft Dynamics Using a New Approach to Neural Network-Based Modeling
  
  *Faranz Kermanshahi, Mehdi Mortazavi*

**Session 11: Fuzzy Logic and Systems**

**Chair:** J. Fernandez de Canete

• A New Evaluation Framework for Artificial Neural Networks: Application in Industry
  
  *Lazaros Iliadis, Stefanos Spartalis, Stavros Tachos*

• Linguistic Interpretation of Two Neuron Fuzzy Cognitive Maps
  
  *Athanasios Tsadiras*

• A Fuzzy Decision Support System Evaluating Qualitative Attributes towards Forest Fire Risk Estimation
  
  *Theocharis Tsataltzinos*

• Image Compression Based on a Novel Fuzzy Learning Vector Quantization Algorithms
  
  *George Tsekouras, Antonios Mamalis, Christos Anagnostopoulos, Dafni Economou, Damianos Gavalas*

**Session 12: Rural Decision Making**

**Chair:** Stephanos Spartalis

• Comparative Analysis of Different Artificial Neural Network Approaches for Fir Trees Breast Height Form Factor Estimation
  
  *Maria Diamantopoulou*

• Runoff modeling through Cascade Correlation and Back Propagation Artificial Neural Networks
  
  *Maria Diamantopoulou, Pantazis Georgiou, Dimitris Papamichail*
• On-line Control of a Fed-Batch Fermentation by Using SOM Based Multiple Local Linear Models
   Bedilu Abineh, Rajib Nayak, Amalendu Ranjan, James Gomes
• Artificial Neural Networks in Detection of Apples Damage
   Tadeusz Kwater, Jacek Bartaman, Robert Pękala

**Session 13: Colour/Image Analysis – Speech Synthesis**
**Chair:** Athanassios Tsadiras
• Neural Network-Based Movie Dialogue Detection
  Margarita Kotti, Emmanouil Benetos, Constantine Kotropoulos
• Colour Class Identification of Tracers Using Artificial Neural Networks
  Robert Kuhn, Robert Bordas, Bernd Wunderlich, Bernd Michaelis, Dominique Thevenin
• A Language-Independent Neural Network-based Speech Synthesizer
  Mario Malcangi, David Frontini
• Data Compression in Biometrics Images
  Zbigniew Gomolka, Boguslaw Twarog, Bogdan Kwiatkowski

**Session 14: Environmental Modelling and Prediction**
**Chair:** Gérard Bloch
• Feature Extraction for Time Series Data: an Artificial Neural Network Evolutionary Training Model for the Management of Mountainous Watersheds
  Thomas Glezakos, Fotis Maris, Theodoros Tsiligiridis, Constantine Yialouris, Konstantinos Ferentinos
• Modelling and Forecasting of Air Quality with the Aid of Machine
  Kostas Karatzas
• Ensemble Selection for Water Quality Prediction
  Ioannis Partalas, Evaggelos Hatzikos, Grigorios Tsoumakas, Ioannis Vlahavas
• Neural Modelling of the Tropospheric Ozone Concentrations in an Urban Site
  Anastasia Paschalidou, Lazaros Iliadis, P Kassomenos, Christos Bezirtzoglou