

# Detailed Program

## Thursday 15/9/2011

- Guided Walking Tour of Corfu** (departure from Old Fortress, opposite from Cavalieri Hotel) 18:00
- Classic music concert – Welcome Reception** (at Corfu Holiday Palace Hotel) 20:00

## Friday 16/9/2011

- Registration** (at Corfu Holiday Palace Hotel) 08:30-09:00
- Welcome message by Professor Vasilis Chrisikopoulos** 09:00

- Keynote Lecture 1** Plenary Session 1 (Corfu Holiday Palace Hotel)
- Professor Nikola Kasabov**  
*Evolving, Probabilistic Spiking Neural Network Reservoirs for Spatio- and Spectro-Temporal Data* 09:00-10:00  
Chair: **Dominic Palmer Brown**

- AIAI Session 1: CVR
- Computer Vision & Robotics** 10:30-11:30  
Chair: **Nikoletta Nicolaou**

**Real Time Robot Policy Adaptation Based on Intelligent Algorithms** *full*  
*Capi, Toda, Kaneko*

**A Model and Simulation of Early-stage Vision as a Developmental Sensorimotor Process** *short*  
*Georgeon, Cohen, Cordier*

**Enhanced Object Recognition in Cortex-like Machine Vision** *full*  
*Tsitiridis, Yuen*

EANN Session 13: CL_PR1		
<b>Classification – Pattern Recognition 1</b>		10:30-11:30
Chair: <b>Nikola Kasabov</b>		
<b>SOM Based Clustering and Optimization of Production</b>		<i>full</i>
<i>Potočnik, Berlec, Starbek, Govekar</i>		
<b>Hypercube Neural Network Algorithm for Classification</b>		<i>full</i>
<i>Palmer-Brown, Jayne</i>		
<b>Behavioral Profiles for Building Energy Performance Using Exclusive SOM</b>		<i>short</i>
<i>Iglesias, Cantos, Kastner, Montero</i>		
Workshop		
<b>CIAB 1</b>		10:30-11:30
Chair: <b>Efstratios Georgopoulos</b>		
<b>Mathematical Models of Dynamic Behaviour of Individual Neural Networks</b>		
<i>Paganian, Adamopoulos, Likothanassis</i>		
<b>Towards Optimal Microarray Universal Reference Sample Designs</b>		
<i>Potamias, Kaforou, Kafentzopoulos</i>		
<b>Information-Preserving Techniques Improve Chemosensitivity Prediction</b>		
<i>Christodoulou, Roe, Folarin, Tsamardinos</i>		
COFFEE BREAK		11:30-11:50
<b>Tutorial 1</b>		Plenary Session 2
<b>Professor Vera Kurkova</b>		11:50-12:50
<i>Inverse Problems in Learning from Data</i>		
Chair: <b>Lazaros Iliadis</b>		
AIAI Session 2: FIN_M_QA1		
<b>AI in Finance, Management and Quality Assurance 1</b>		12:50-13:30
Chair: <b>Ioannis Stephanakis</b>		
<b>Intelligent Software Project Scheduling and Team Staffing with Genetic Algorithms</b>		<i>full</i>
<i>Stylianou, Andreou</i>		

## Time Variations of Association Rules in Market Basket Analysis

*Papavasileiou, Tsadiras*

*full*

EANN Session 14: CL\_PR2

### **Classification – Pattern Recognition 2**

12:50-13:30

Chair: **Ioannis Hatziligeroudis**

#### **Improving the Classification Performance of Liquid State Machines Based on the Separation Property**

*Hourdakis, Trahanias*

*full*

#### **Optimal Fuzzy Controller Mapped from LQR under Power and Torque Constraints**

*Chen, Lian*

*short*

Workshop

### **CIAB 2**

10:30-11:30

Chair: **Spiros Likothanasis**

#### **Optimizing Filter Processes on Protein Interaction Clustering Results**

*Moschopoulos, Beligiannis, Kossida, Likothanasis*

#### **Adaptive Filtering Techniques Combined with Natural Selection**

*Dimitrakopoulos, Theofilatos, Georgopoulos, Likothanasis, Tsakalidis, Mavroudi*

LUNCH

13:30-14:30

AIAI Session 3: FS

### **Fuzzy Systems**

14:30-15:30

Chair: **Hassan Kazemian**

#### **Using a Combined Intuitionistic Fuzzy Set-TOPSIS Method for Evaluating Project and Portfolio Management Information Systems**

*Gerogiannis, Fitsilis, Kameas*

*full*

#### **Fuzzy and Neuro-Symbolic Approaches to Assessment of Bank Loan Applicants**

*Hatzilygeroudis, Prentzas*

*full*

#### **Comparison of Fuzzy Operators for IF-Inference Systems of Takagi-Sugeno Type in Ozone Prediction**

*Olej, Hájek*

*short*

EANN Session 15: LE\_RE\_RBF1

## Learning - Recurrent & RBF ANN 1

14:30-15:30

Chair: **Efstratios Georgopoulos**

### Time-Frequency Analysis of Hot Rolling using Manifold Learning

*Fernández, Blanco, García, López, Ordoñez, González*

*short*

### ART-based Fusion of Multi-Modal Information for Mobile Robots

*Berghöfer, Schulze, Tscherepanow Wachsmuth*

*full*

### Quantization of Adulteration Ratio of Raw Cow Milk by Least Squares Support Vector Machines (LS-SVM) and Visible/Near Infrared Spectroscopy

*Hsieh, Hung Kuo*

*full*

Workshop

## CISE 1

14:30-15:30

Chair: **Andreas Andreou**

### Global Optimization of Analogy-Based Software Cost Estimation

*Milios, Stamelos, Chatzibagias*

### The Impact of Sampling and Rule Set Size

*MacDonell*

### Intelligent Risk Identification and Analysis in Computer Systems

*Mohammadian*

COFFEE BREAK

15:30-15:50

AIAI Session 4: NOV\_AL\_OPT

## Novel Algorithms & Optimization

15:50-16:50

Chair: **Andre Krause**

### A New Criterion for Clusters Validation

*Alizadeh, Minaei, Parvin*

*short*

### Generalized Bayesian Pursuit: a Novel Scheme for Multi-Armed Bernoulli Bandit Problems

*Zhang, B. Oommen, Granmo*

*full*

### A Recurrent Neural Network Multivalued for the Quadratic Assignment Problem

*Triviño, Muñoz, Domínguez*

*full*

EANN Session 16: LE\_RE\_RBF

## Learning - Recurrent & RBF ANN 2

15:50-16:50

Chair: **Spiros Likothanasis**

### Anomaly Detection from Network Logs Using Diffusion Maps

*Sipola, Juvonen, Lehtonen*

*full*

### Large Datasets: a Mixed Method to Adapt and Improve their Learning by Neural Networks used in Regression Contexts

*Sauget, Henriet, Michel Salomon and Sylvain Contassot-Vivier*

*full*

### LQR-Mapped Fuzzy Controller Applied to Attitude Stabilization of a Power-Aided-Unicycle

*Chen, Hsu, Fong*

*short*

Workshop

## CISE 2

16:50-17:30

Chair: **Andreas Andreou**

### Benchmark Generator for Software Testers

*Ferrer, Chicano, Alba*

### Automated Classification of Medical-billing Data

*Crandall, Lynagh, Mehoke, Pepper*

EANN Session 17: EVOL1

## Evolutionary Algorithms & Optimization 1

16:50-17:30

Chair: **Chrisina Jayne**

### Evolutionary Algorithm Optimization of Edge Delivery Sites in Next Generation Multi-Service Content Distribution Networks

*Stephanakis, Logothetis*

*full*

### Neural Networks Approach to Optimization of Steel Alloys Composition

*Koprinkova-Hristova, Tontchev, Popova*

*full*

## Saturday 17/9/2011

**Registration**

08:30-09:00

AIAI Session 5: ML\_FC

### **Computer Vision & Robotics**

09:00-10:30

Chair: **Ioannis Stamelos**

#### **Comparative Analysis of Content-based and Context-based Similarity on Musical Data**

*full*

*Boletsis, Gratsani, Chasanidou, Karydis, Kermanidis*

#### **Ranking Functions in Large State Spaces**

*full*

*Häming, Peters*

#### **Machine Learning of User Preferences in a Declarative Modelling Environment**

*full*

*Bardis, Golfopoulos, Makris, Miaoulis, Plemenos*

#### **Learning Shallow Syntactic Dependencies from Imbalanced Datasets: A Case Study in Modern Greek and English**

*short*

*Karozou, Kermanidis*

#### **Modeling and Dynamic Analysis on Animals' Repeated Learning Process**

*short*

*Lin, Yang, Xu*

EANN Session 18: SVM

### **Support Vector Machines**

09:00-10:30

Chair: **Harris Papadopoulos**

#### **Object Segmentation using Multiple Neural Networks for Commercial Offers Visual Search**

*full*

*Gallo, Nodari, Vanetti*

#### **Determining Soil – Water Content by Data Driven Modeling when Relatively Small Data Sets Are Available**

*short*

*Cisty*

#### **Permutation Entropy for Discriminating 'Conscious' and 'Unconscious' State in General Anaesthesia**

*full*

*Nicolaou, Houris, Alexandrou, Georgiou*

#### **Support Vector Machines versus Artificial Neural Networks for Wood Dielectric Loss Factor Estimation**

*full*

*Iliadis, Tachos, Avramidis, Mansfield*

Workshop

## **ASCOTE**

Chair: **Hassan Kazemian**

09:00-10:30

### **An Intelligent Approach to Detect Probe Request Attacks**

*Ratnayake, Kazemian, Yusuf, Abdullah*

### **An Intelligent Keyboard Framework for Improving Disabled People**

*Ouazzane, Li, Kazemian*

### **Finding 3g Mobile Network Cells with Similar Radio Interface Quality Problems**

*Kumpulainen, Särkioja, Kylväjä, Hätönen*

### **Analyzing 3G Quality Distribution Data with Fuzzy Rules and Fuzzy Clustering**

*Kumpulainen, Särkioja, Kylväjä, Hätönen*

### **Adaptive Service Composition for Meta-Searching in a Mobile Environment**

*Cheung, Kazemian*

### **Simulation of Web Data Traffic Patterns Using Fractal Statistical Modelling**

*Tang, Kazemian*

COFFEE BREAK

10:30-11:00

## **Keynote Lecture 2**

Plenary Session 3

### **Professor Tom Heskes**

*Reading the Brain with Bayesian Machine Learning*

Chair: **Vera Kurkova**

11:00-12:00

AIAI Session 6: MED\_ETH

## **Medical Applications & Ethics of AI**

Chair: **Ilias Maglogiannis**

12:00-12:50

### **Data Mining Tools used in Deep Brain Stimulation Treatments - Analysis Results**

*Geman*

*short*

### **Reliable Probabilistic Prediction for Medical Decision Support**

*Papadopoulos*

*full*

## Ethical Issues of Artificial Biomedical Applications

*Alexiou, Psixa, Vlamos*

*short*

EANN Session 19: LE\_RE\_RBF3

### Learning - Recurrent & RBF ANN 3

Chair: **Tom Heskes**

12:00-12:50

#### Application of Radial Basis Network and Response Surface Method to Quantify Compositions of Raw Goat Milk with Visible/Near Infrared Spectroscopy

*Hsieh, Hung, Lin*

*short*

#### A Neural Based Approach and Probability Density Approximation for Fault Detection and Isolation in Nonlinear Systems

*Boi, Montisci*

*short*

#### Method for Training a Spiking Neuron to Associate Input-output Spike Trains

*Mohammed, Schliebs, Matsuda, Kasabov*

*full*

AIAI Session 7: WEB\_TXT1

### Web-Text Mining & Semantics 1

Chair: **Katia Kermanidis**

12:00-12:50

#### Modeling of Web Domain Visits by Radial Basis Function Neural Networks and Support Vector Machine Regression

*Olej, Filipová*

*short*

#### A Framework for Web Page Rank Prediction

*Voudigari, Pavlopoulos, Vazirgiannis*

*full*

LUNCH

13:00-14:00

### Tutorial 2

Plenary Session 4

#### Professor Michel Verleysen

*Nonlinear Dimensionality Reduction and Feature Selection*

Chair: **Vasilis Chrisikopoulos**

14:00-15:00

AIAI Session 8: MED

## Medical Applications of AI

15:00-16:15

Chair: **Mauricio Fiasche**

### Cascaded Window Memoization for Medical Imaging

*Khalvati, Kianpour, Tizhoosh*

*full*

### Fast Background Elimination in Fluorescence Microbiology Images: Comparison of Four Algorithms

*Gong, Artés-Rodríguez*

*short*

### Experimental Verification of the Effectiveness of Mammography Testing Description's Standardization

*Podsiadły-Marczykowska, Zawislak*

*short*

EANN Session 20: FE\_EX

## Feature extraction – minimization

15:00-16:15

Chair: **Andreas Andreou**

### Two Different Approaches of Feature Extraction for Classifying the EEG Signals

*Jahankhani, Lara*

*full*

### An Ensemble Based Approach for Feature Selection

*Minaei-Bidgoli, Asadi, Parvin*

*short*

### A New Feature Extraction Method based Clustering for Face Recognition

*Elferchichi, Zidi, Laabidi, Ksouri, Maouche*

*short*

Workshop

## AIAB 1

15:00-16:15

Chair: **Harris Papadopoulos**

### Brain White Matter Lesions Classification in Multiple Sclerosis Subjects

*Loizou, Kyriakou, Seimenis, Pantziaris, Christodoulou, Pattichis*

### Using Argumentation for Ambient Assisted Living

*Marcais, Spanoudakis, Moraitis*

### Modelling Nonlinear Responses of Resonance Sensors

*Salpavaara, Kumpulainen*

## An Adaptable Framework for Integrating and Querying Sensor Data

*Ferdous, Kapidakis, Fegaras, Makedon*

### Guided Tour of Achilion Palace

Gala Dinner at Taverna "Trypas"

18:00

## Sunday 18/9/2011

Registration

08:30-09:00

### Keynote Lecture 3

Plenary Session 5

Professor Anthony Cohn

*Learning about Activities and Objects from Video*

Chair: Michel Verleysen

09:00-10:00

AIAI Session 9: WEB\_TXT2

### Web-Text Mining & Semantics 2

Chair: Anthony Cohn

10:00-11:20

Towards a Semantic Calibration of Lexical Word via EEG

*Poulos*

*full*

A Random Forests Text Transliteration System for Greek Digraphia

*Panteli, Maragoudakis*

*short*

Acceptability in Timed Frameworks with Intermittent Arguments

*Cobo, Martinez, Simari*

*full*

Object Oriented Modelling in Information Systems

Based on Related Text Data

*Onkov*

*short*

EANN Session 21: MED\_ANN

## Medical Applications of ANN

10:00-11:20

Chair: **Georgios Anastasopoulos**

### A Recurrent Neural Network Approach for Predicting Glucose Concentration in Type-1 Diabetic Patients

*short*

*Allam, Nossair, Gomma, Ibrahim, Abd Elsalam*

### Segmentation of Breast Ultrasound Images Using Neural Networks

*full*

*Othman, Tizhoosh*

### Knowledge Discovery and Risk Prediction for Chronic Diseases: an Integrated Approach

*full*

*Verma, Fiasche, Cuzzola, Carlo Morabito, Irrera*

EANN Session 22: LE\_RE\_RBF4

## Learning - Recurrent & RBF ANN 4

10:00-11:20

Chair: **Mario Malcangi**

### Transferring Models in Hybrid Reinforcement Learning Agents

*full*

*Fachantidis, Partalas, Tsoumakas, Vlahavas*

### A Neural Network Tool for the Interpolation of foF2 Data in the Presence of Sporadic E Layer

*full*

*Haralambous, Ioannou, Papadopoulos*

COFFEE BREAK

11:20-11:40

AIAI Session 10: ENV

## Environmental and Earth Applications of AI

11:40-13:20

Chair: **Kostas Karatzas**

### EcoTruck: An Agent System for Paper Recycling

*full*

*Berzigiannis, Sakellariou*

### Prediction of CO and NOx levels in Mexico City using associative models

*full*

*Arguelles, Yáñez, López, Camacho Nieto*

### Neural Network Approach to Water-Stressed Crops Detection Using Multispectral WorldView-2 Satellite Imagery

*full*

*Culibrk, Lugonja, Minic, Crnojevic*

**A Generalized Fuzzy-rough Set Application for Forest Fire Risk Estimation  
Feature Reduction** *full*  
*Tsataltzinos, Iliadis, Spartalís*

**Pollen Classification Based on Geometrical, Descriptors and Colour  
Features** *short*  
*Rivas, Banos, Travieso Gonzalez, Alonso-Hernández, Pérez-Suárez, Arroyo-  
Hernández, Mora-Mora*

EANN Session 23: (MULTI)

**Multi Layer ANN**

11:40-13:20

Chair: **Pekka Kumpulainen**

**Predictive Automated Negotiators Employing Risk-Seeking and Risk-  
Averse Strategies** *full*  
*Masvoula, Halatsis, Martakos*

**Maximum Shear Modulus Prediction by Marchetti Dilatometer Test Using  
Neural Networks** *full*  
*Cruz, Santos, Cruz*

**NNIGnets, Neural Networks Software** *short*  
*Fontes, Lopes, Silva, Santos, Marques De Sá*

**Neural Network Rule Extraction to Detect Credit Card Fraud** *short*  
*Ryman-Tubb, Krause*

**Key Learnings From Twenty Years of Neural Network Applications in the  
Chemical Industry** *full*  
*Owens*

Workshop

**AIAB 2**

11:40-13:20

Chair: **Ilias Maglogiannis**

**Feature Selection by Conformal Predictor**  
*Yang, Nouretdinov, Luo, Gammerman*

**Applying Conformal Prediction to the Bovine TB Diagnosing**  
*Adamskiy, Nouretdinov, Mitchell, Coldham, Gammerman*

**Classifying Ductal Tree Structures Using Topological Descriptors**  
*Skoura, Megalooikonomou, Bakic, Maidment*

**Intelligent Selection of Human miRNAs and Mouse mRNAs**  
*Valavanis, Moulos, Maglogiannis, Klein, Schanstra, Chatziioannou*

**Independent Component Clustering for Skin Lesions Characterization**  
*Tasoulis, Doukas, Maglogiannis, Plagianakos*

**A Comparison of Venn Machine with Platt's Method**  
*Zhou, Nouretdinov, Luo, Randell, Coldham, Gammerman*

LUNCH

13:20-14:20

**Tutorial 3**

Plenary Session 6

**Professor Dominic Palmer-Brown and Dr Chrisina Jayne**

*Self-organisation Modal Learning Algorithms*

Chair: **Ioannis Manolopoulos**

14:20-15:20

AAI Session 11: PR\_CON

**Pattern Recognition-Constraints**

Chair: **Ilias Sakellariou**

15:20-16:50

**A New Discernibility Metric and Its Application  
on Pattern Classification and Feature Evaluation**  
*Voulgaris*

*full*

**Predicting Postgraduate Students' Performance Using Machine Learning  
Techniques**  
*Koutina, Kermanidis*

*full*

**Employing a Radial-basis Function Artificial Neural Network to Classify  
Western and Transition European Economies Based on the Emissions  
of Air Pollutants and on their Income**  
*Kitikidou, Iliadis*

*full*

**A Bio-inspired Image Representation Model  
Using non-Classical Receptive Field**  
*Wei, Zuo*

*short*

EANN Session 24: CL\_PR3

### **Classification – Pattern Recognition 3**

15:20-16:50

Chair: **Ignazio Gallo**

#### **Induction of Linear Separability through the Ranked Layers of Binary Classifiers**

*short*

*Bobrowski*

#### **Classifying the Differences in Gaze Patterns of Alphabetic and Logographic L1 Readers - a Neural Network Approach**

*full*

*Krause, Essig, Essig-Shih, Schack*

#### **Subspace-based Face Recognition on an FPGA**

*full*

*Pizarro, Figueroa*

#### **A Window-Based Self-Organizing Feature Map For Vector Filtering Segmentation of Color Medical Imagery**

*short*

*Stephanakis, Anastassopoulos, Iliadis*

Workshop

### **ISQLIS**

15:20-16:50

Chair: **Kostas Karatzas**

#### **Investigation of Medication Dosage Influences**

*Karatzas, Riga, Voukantsis, Dahl*

#### **Combination of Survival Analysis and Neural Networks**

*Kitikidou, Iliadis*

#### **An Artificial Intelligence-Based Environment Quality Analysis System**

*Oprea, Iliadis*

#### **Personalized Information Services for Quality of Life**

*Voukantsis, Karatzas, Jaeger, Berger*

#### **Fuzzy Modeling of the Climate Change Effect to Drought**

*Papakonstantinou, Iliadis, Pimenidis, Maris*

COFFEE BREAK

16:50-17:10

AIAI Session 12: FIN\_M\_QA2

## **AI in Finance Management and Quality Assurance**

17:10-18:10

Chair: **Spyros Sioutas**

### **A Software Platform for Evolutionary Computation with Pluggable Parallelism and Quality Assurance**

*short*

*Evangelista, Pinho, Gonçalves, Maia, Sobral, Rocha*

### **Classifying the Differences in Gaze Patterns of Alphabetic and Logographic L1 Readers - a Neural Network Approach**

*full*

*Far, Pimenidis, Jahankhan, Wijeyesekera*

### **Disruption Management Optimization for Military Logistics**

*short*

*Kaddoussi, Zoghلامي, Zgaya, Hammadi and Bretaudeau*

EANN Session 25: FSYS

## **Fuzzy Systems**

17:10-18:10

Chair: **Ioannis Karydis**

### **A Neuro-Fuzzy Hybridization Approach to Model Weather Conditions in a Mission Planning and Evaluation System**

*full*

*Rao, Iliadis, Spartalis*

### **Employing Smart Logic to Spot Audio in Real Time on Deeply Embedded Systems**

*full*

*Malcangi*

### **Vision-based Autonomous Navigation Using Supervised Learning Techniques**

*full*

*Souza, Pessin, Osório, Wolf*

EANN Session 26: EVOL2

## **Evolutionary Algorithms & Optimization 2**

17:10-18:10

Chair: **Kyriaki Kitikidou**

### **Application of Neural Networks to Morphological Assessment in Bovine Livestock**

*short*

*Velasco, Orellana, Macías, Caballero, Manso*

### **Incremental- Adaptive- Knowledge Based- Learning for Informative Rules Extraction in Classification Analysis of aGvHD**

*full*

*Fiasché, Verma, Cuzzola, Morabito, Irrera*