

CONFERENCE PROGRAM

Friday 3rd, June

9:00 - 18:00 **REGISTRATION** – IIASS Secretariat

9:10 **WELCOME ADDRESS**

G. Scarpetta, President of IIASS

F. C. Morabito, President of SIREN, Chair of WIRN

Special Session

“Autonomous Machine Learning” in cooperation with INNS SIG AML
Chairs: Paolo Arena and Asim Roy

9:20 ***Eduardo R. CAIANIELLO Lecture (Invited)***

Asim Roy

Arizona State University, USA

A theory of the brain - it uses both distributed and local representation

10:00 Invited Lecture

Luigi Fortuna

Università di Catania

Inside Cellular Nonlinear Neural Networks Dynamics: Arts, Complexity and Time

10:30 Invited Lecture

Bruno Apolloni

Università di Milano

Training a network of mobile neurons

11:00 **Coffee Break**

11:20 Paolo Arena, Luca Patanè and Pietro Savio Termini
Decision making processes in the fruit fly: a computational model

11:40 Eleonora Arena, Paolo Arena and Luca Patanè
Modelling stepping strategies for steering in Insects

12:00 Ferdinando Giacco and Silvia Scarpetta
Attractor networks and memory replay of phase coded spike patterns

Regular Session

Chair: N. A. Borghese

12:20 Reza Dariani, Arturo Buscarino, Mattia Frasca and Luigi Fortuna
Effect of motion on pinning control of time-varying networks

12:40 Antonietta M. Esposito, Luca D'Auria, Flora Giudicepietro, Mariantonietta Longobardi and Marcello Martini
Clustering of Hybrid Events at Stromboli Volcano (Italy)

13:00 **Lunch Break**

Special Session

"Neuromorphic Engineering"

Chairs: Elisabetta Chicca and Eros Pasero

15:00 **Invited Lecture**

Giacomo Indiveri

ETH Zurich, Switzerland

Neuromorphic processors: event-based VLSI models of cortical circuits for brain-inspired computation

15:40 Paolo Motto Ros and Eros Pasero
Interfacing an AER Vision Sensor with a Tactile Display: a Proposal for a New Haptic Feedback Device

16:00 Giacomo Indiveri and Elisabetta Chicca
A VLSI neuromorphic device for implementing spike-based neural networks

16:20 David Lester and Stephen Furber
SpiNNaker: Distributed Computer Engineering for Neuromorphics

16:40 Chiara Bartolozzi
Design concepts for a novel asynchronous space-variant vision sensor

17:00 Massimiliano Giulioni and Paolo Del Giudice
A distributed VLSI attractor network learning visual stimuli in real time and performing perceptual decisions

17:20 **Coffee Break**

Regular Session

Chair: R. Serra

17:40 Alessandro Rozza, Stefano Arca, Elena Casiraghi, Paola Campadelli, Massimo Natale, Enrico Bucci and Paolo Consoli
Automatic Alignment of Gel 2D Images

18:00 Davide Campioli, Marco Villani, Irene Poli and Roberto Serra
Dynamical stability in random Boolean networks

18:20 N. Alberto Borghese, Alicia Rossini and Christian Quadri
Clever Pac-man

18:40 Alberto Bertoni, Matteo Re, Francesco Sacca' and Giorgio Valentini
Identification of promoter regions in genomic sequences by 1-dimensional constraint clustering



19:00 ***E.R. Caianiello Award for the Best Ph.D. Thesis in Neural Network Research (funded by Aubay SpA)***

Saturday 4th June

Special Session

“Models of Behaviours for Human-Machine Interaction”

Chairs: Anna Esposito, Mauro Maldonato, Luigi Trojano

9:10 ***Maria Marinaro Lecture (Invited)***

Edoardo Boncinelli

Università Vita-Salute San Raffaele Milano

Conscience's problems

9:50 ***Luigi Maria Ricciardi Lecture (Invited)***

Sergio Mugnai

Università di Firenze

Signaling and communication in plant

10:20 Mauro Maldonato

Embodied mind. Prolegomena for a neurophenomenological theory

10:40 Luigi Trojano, Marta Ponari, Massimiliano Conson

Social modulation of attention: How others' gaze and facial expressions guide my attention

11:00 **Coffee Break**

11:20 Anna Esposito, Alda Troncione

The recognition of emotional vocal expressions by stuttering children

11:40 Marcos Faundez-Zanuy, Marco Grassi

Gender Recognition neural networks and DCT of Face Images

12:00 Vincenzo Capuano, Jiri Mekyska, Marcos Faundez-Zanuy, Anna Esposito,

Induced emotional facial expressions: an attempt for a naturalistic database

12:20 Mirko Esposito, Alessandro Vinciarelli, Anna Esposito

On the perception of visual durational features in speech

12:40 Enric Sesa-Nogueras, Marcos Faundez-Zanuy

Writer recognition by means of stroke categorization based on self-organizing maps

13:00 Lunch Break

Regular Session

Chair: M. Gori

15:00 Marco Gori

On the time complexity of regularized least square

15:20 Francesco A. N. Palmieri, Domenico Ciunzio, Davide Mattera, Gianmarco Romano and Pierluigi Salvo Rossi

From Examples to Bayesian Inference

15:40 Emanuele Principi, Rudy Rotili and Stefano Squartini

Enhanced Multichannel Histogram Equalization for Speech Recognition in noisy acoustic conditions

16:00 Yibin Ye, Stefano Squartini and Francesco Piazza

ELM-based Algorithms for Nonstationary Volterra System Identification

16:20 Stefano Rovetta and Francesco Masulli

Spectral indexes of quality, diversity and stability in fuzzy clustering

16:40 Michele Scarpiniti, Danilo Comminiello, Raffaele Parisi and Aurelio Uncini

A Collaborative Approach to Time-series Prediction

17:00 Marta Cardin, Marco Corazza, Stefania Funari and Silvio Giove

A fuzzy-based scoring rule for author ranking

17:20 **Coffee Break**

18:00 **SIREN Society Meeting**

20:30 **Social Dinner**

Sunday 5th June

Regular Session Chair: S. Vitabile

9:00 Salvatore Vitabile, Vincenzo Conti, Barbara Lanza, Domenico Cusumano and Filippo Sorbello

Topological Information, Flux Balance Analysis, and Extreme Pathways Extraction for Metabolic Networks Behaviour Investigation

9:20 Maurizio Fiasche', Maria Cuzzola, Giuseppe Messina, Giuseppe Irrera and Francesco Carlo Morabito.

Personalized Modelling based Medical Decision Support System over Gene Expression Data: A New Framework Proposed

9:40 Umberto Maniscalco and Giovanni Pilato

A Neural Multiplexer to Improve Soft-Sensors Performances

10:00 Claudio Gallicchio and Alessio Micheli

Supervised State Mapping of Clustered GraphESN States

10:20 Francisco-Javier Arroyo-Cañada and Jaime Gil-Lafuente

Using of probabilistic sets methodology to select the appropriate alternative of a t-commerce application set

10:40 Domenico Labate, Fabio La Foresta, Giuseppina Inuso and Francesco Carlo Morabito

Multiscale Entropy Analysis of Artifactual EEG Recordings

11:00 Alessandro Antonucci and Rocco De Rosa

Time Series Classification by Imprecise Hidden Markov Models

11:20 Gabriele Lombardi, Alessandro Rozza, Elena Casiraghi and Paola Campadelli

A Novel Approach for Geometric Clustering based on Tensor Voting Framework

11:40 Maurizio Fiasche' and Francesco Carlo Morabito

Quantum-Inspired Evolutionary Algorithm for Optimization Problems Approach

12:00 **Conference Closing**