



International Institute for Advanced Scientific Studies
"Eduardo R. Caianiello"

INTERNATIONAL SCHOOL ON NEURAL NETS

"E.R. CAIANIELLO"

2nd Course: Adaptive Processing of Temporal Information
Vietri sul Mare, Salerno - Italy - 6-14 September 1997

AI*IA - CNR - IEEE Neural Network Council (RIG) - IIASS
Provincia di Salerno - SIREN - Università di Salerno - Università di Siena.

PROGRAMME AND LECTURES

L. Giles: Recurrent Neural Networks: Architectural Diversity;
M. Gori: Learning Sequences and Data Structures: Topics in Complexity;
Y. Bengio: Advances in Learning Algorithms for Markovian Models with Hidden States;
B. A. Pearlmutter: The Use of Temporal Structure and Prior Models in Source Separation and Localization;
P. Frasconi: Hidden Recursive Models;
H. Bourlard: HMM-Recurrent Network Hybrids for Speech Recognition;
H. Siegelmann: Computational Capabilities of Artificial Neural Networks;
A. C. Tsao: Discrete Time Recurrent Network Architectures: a Unifying Review;

Z. Ghahramani: (I) Beyond Hidden Markov Models and Kalman Filters;
Z. Ghahramani: (II) Structured Approximations for Inference and Learning in Time Series Models with Large State Spaces;
P. Baldi: Bayesian Modeling of Time Series and Hybrid HMM/NN (I. Theory, II. Application);
P. Gallinari: Auto Regressive Models For on Line Cursive Handwriting Recognition;
E. Wan: Diagrammatic Methods for Deriving and Relating Temporal Neural Network Algorithms;
M. Mozer: Event - versus Clock-Based Representations of Time in Real-Word Perception and Control Tasks;
A. Sperduti: Neural Network for Processing Data Structures;

PURPOSE

This summer school is intended to provide a unified view of different techniques for processing temporal information that rely hardly on learning. The topics of the school should include architectures (eg., recurrent networks, Markovian models), optimization algorithms (eg., gradient-based, EM-based), theoretical results, integration with symbolic systems, and applications (control, speech recognition, time series analysis) related to sequence processing tasks.

POETIC TOUCH

Vietri (from "Veteri", its ancient Roman name) sul Mare ("on sea") is located within walking distance from Salerno and marks the beginning of the Amalfi coast. Short rides take to Positano, Sorrento, Pompei, Herculaneum, Paestum, Vesuvius, or, by boat, to the isles of Capri, Ischia and Procida, Velia (the ancient "Elea" of Zeno and Parmenides), is a hundred kilometres farther, down along the coast.

GENERAL INFORMATION

People wishing to attend the course should apply in writing to:

Prof. Maria Marinaro - IIASS "Eduardo R. Caianiello"
via G. Pellegrino, 19 - 84019 Vietri sul Mare (SA) Italy,
Tel: +39 89 761167 - fax: +39 89 761189

They should specify:

- 1) date and place of birth together with present nationality
- 2) degree and other academic qualifications
- 3) present position and place of work

Young researchers with little experience should include a letter of recommendation from the head of their research group or from a senior scientist, active in the field.

The total fee, which includes full board and lodging (arranged by the school), is \$1000 US. Thanks to the generosity of the sponsoring

Institutions, partial support can be granted to some deserving students, who need financial help. Requests to this effect must be specified and justified in the application letter.

Closing date for application: June 2nd 1997
no special application form is required.

Admission to the Course will be decided in consultation with the Advisory Committee of the School consisting of Professors:
C.L. Giles, M. Gori, M. Marinaro.

It is regretted that it will not be possible to allow any person not selected by the Committee of the School to follow the Course.

Participants must arrive in Vietri on September 5th, no later than 5 p.m.

Further informations can be found at

http://www.ing.unisi.it/DII/research/neural/SUMMER_SCHOOL

Directors of the School
M. Marinaro - M. I. Jordan

Directors of the Course
C.L. Giles - M. Gori

IIASS

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