Advanced School and Workshop on Soft Computing and Complex Systems

Robert BABUSKA
Delft University of Technology
Holland

Neuro-Fuzzy Modelling

Intelligent Control

Georg DORFFNER
Department of Medical Cybernetics and Artificial Intelligence
University of Vienna
Austria

Neural Computation and Applications in Time Series and Signal Processing

José FÉLIX COSTA
Department of Mathematics
Technical University of Lisbon
Portugal

Analog Computation

Carlos FONSECA
University of Algarve
Portugal

Multi-criteria Genetic Optimisation

Juergen SCHMIDHUBER
IDSIA- Instituto Dalle Molle di Studi sull'Intelligenza Artificiale
Switzerland

Universal learning algorithms based on the theory of universal induction and Kolmogorov complexity, with applications

Recurrent Neural Networks

Goals

The main scientific goal of the advanced school is to introduce recent developments in mathematical techniques applied to complex engineering problems. In particular, the school will focus on different aspects of the area called soft computing, including fuzzy and conexionist systems, evolutionary computation, artificial life and complex systems. Harnessing complexity is an important aspect of today problem solving. Complexity may be due to the presence of uncertain information or because the regularities of a system, we are trying to understand, cannot be briefly described. We will discuss recent developments in dealing with complexity, by means of introducing the methods and their sound mathematical foundations, as well as through the work of some difficult problems.

Audience

The target audience is: worldwide students, with a good mathematical background and an engineering bias. These students are supposed to be engaged in a post-graduation course, like a Ph.D..