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Collana	Lecture Notes in Computer Science, , 0302-9743 ; ; 540
Disciplina	004.6
Soggetti	Computer communication systems Architecture, Computer Artificial intelligence Pattern recognition Optical data processing Special purpose computers Computer Communication Networks Computer System Implementation Artificial Intelligence Pattern Recognition Image Processing and Computer Vision Special Purpose and Application-Based Systems
Lingua di pubblicazione	Inglese
Formato	Materiale a stampa
Livello bibliografico	Monografia
Note generali	Bibliographic Level Mode of Issuance: Monograph
Nota di contenuto	Cooperative computing and neural networks -- Neural Net's theory — The specifications of a computational model of memory and information processing in decision-making -- Chaotic neural networks and associative memory -- Nonequilibrium model of neural networks -- A modified algorithm for self-organizing maps based on the Schrödinger equation -- Neural network modelling by means of networks of finite automata -- Adaptive optimization of neural algorithms -- Neural networks with hysteresis type of nonlinearity exhibit global optimization property -- Stability measurement criterion

for neural networks of competitive learning -- On the power of networks of majority functions -- Using quadratic perceptrons to reduce interconnection density in multilayer neural networks -- Always trying to write an equation for the brain -- Transformation of control signals for saccadic eye movements -- On the semantics of morphogenesis in photoreceptors -- Implementing a "psychophysical" pattern classifier in a decremting network -- Contributions of Neural Net's Theory to the understanding of Psychopathological productions in Schizophrenia -- Backpropagation growing networks: Towards local minima elimination -- Methods for encoding in multilayer feed-forward neural networks -- Learning algorithm for feed-forward neural networks with discrete synapses -- Synthesis of adaptive memories with neural networks -- Minimally disturbing learning -- Fuzzy-neunet: A non standard neural network -- Decrementing hamming and Bayesian neural networks: Analog implementations and relative performance -- Dynamic thresholds and attractor neural networks -- Use of genetic algorithms in neural networks definition -- Simulated evolution of modular networks -- Computational experiments with Boltzmann Machines -- An adaptive resonance theory architecture for the automatic recognition of on-line handwritten symbols of a mathematical editor -- An experimental design advisor and neural network analysis package -- Extending an object oriented concurrent logic language for neural network simulations -- Application and implementation of neural networks in microelectronics -- Cmos implementation of a cellular neural network with dynamically alterable cloning templates -- Systolic implementation of hopfield networks of arbitrary size -- Vlsi fully connected neural networks for the implementation of other topologies -- Backpropagation multilayer perceptron: A modular implementation -- Toroidal neural network processor: Multiple learning algorithm support -- Cmos implementation of synapse matrices with programmable analog weights -- Analog VLSI synapse matrix with enhanced stochastic computations -- Cmos continuous BAM with on chip learning -- An integrated circuit for artificial neural networks -- An application of neural networks to natural scene segmentation -- An approach to isolated word recognition using multilayer perceptrons -- The use of multilayer perceptrons in isolated word recognition -- Continuous speech recognition with the connectionist viterbi training procedure: A summary of recent work -- Recurrent neural networks for speech recognition -- A speech recognition system that integrates neural nets and HMM -- Comparison of neural networks and conventional techniques for automatic recognition of a multilingual speech database -- Optimization problems on concurrent testing solved by neural networks -- Application of high-order hopfield neural networks to the solution of diophantine equations -- Self-organizing feature maps and their application to digital coding of information -- Neural networks as error correcting systems in digital communications -- Application of vector quantization algorithms to protein classification and secondary structure computation -- Application of the LVQ neural method to a stellar catalogue -- Neural network design for mobile robot control following a contour -- A supervisory technique to apply neural networks in control -- Autonomous controller tuning by using a neural network -- Neural networks for water demand time series forecasting -- Using artificial neural networks to aid decision making processes -- Data analysis: How to compare Kohonen neural networks to other techniques?.

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## Sommario/riassunto

Artificial neural networks are massively parallel interconnected networks of simple elements which are intended to interact with the

objects of the real world in the same way as biological nervous systems do. Interest in these networks is due to the opinion that they are able to perform tasks like image and speech recognition that have only been implemented in limited ways by traditional computing methods. This book includes invited lectures and the full contributions to the International Workshop on Artificial Neural Networks held in Granada, Spain, September 17-19, 1991. The workshop was sponsored by the IEEE Computer Society, the Spanish Association for Computing and Automatics, and the University of Granada. The contributions were selected by an international program committee; the authors of the papers come from 12 countries. The book is organized in six sections, covering: - Neural network theories and neural models - Biological perspectives - Neural network architectures and algorithms - Software developments and tools - Hardware implementations - Applications.

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