Connections

The Newsletter of the IEEE Neural Networks Council

COMPUTATIONAL INTELLIGENCE: IMITATING LIFE

SYMPOSIUM SPEAKERS:

Hans-Paul Schwefe	On the Evolution of Evolutionary Computation
Kenneth DeJong	Genetic Algorithms: a 25 Year Perspective
Lawrence J. Fogel	Evolutionary Programming in Perspective
Lawrence Davis	Genetic Algorithms for Optimization: Three Case Studies
Kiroaki Kitano	Beyond AI: The Double Helix of AI and Alife
Bernard Manderick	How to Improve GA-performance for Combinatorial Optimization Problems by Analyzing their Fitness Landscape
Heinz Muehlenbein	Theory and Applications of the Breeder Genetic Algorithm
Ingo Rechenberg	Evolution Strategy
David Schaffer	Combinations of Genetic Algorithms with NNs or Fuzzy Systems
Henri Prade	Similarity-based Approximate Reasoning
Ramon Lopez de Mantaras	Reasoning Under Uncertainty and Learning in Knowledge Based Systems: Imitating Human Problem Solving Behavior
Hamid Berenji	Fuzzy Systems that Can Learn
Piero P. Bonissone	Fuzzy Logic Controllers: An Industrial Reality
Takeshi Yamakawa	A Neo Fuzzy Neuron and Its Applications to System Identification and Expectation of Chaotic Behavior
Michio Sugeno	Qualitative Modeling based on Numerical Data and Knowledge Data, and its Application to Control
James C. Bezdek	Neural and Fuzzy Models, Pattern Recognition and Computational Intelligence
James Keller	Computational Intelligence in High Level Computer Vision: Determining Spatial Relationships
Witold Pedrycz	Fuzzy Modelling: Methodology, Algorithms, and Practice
Pratap Khedkar	Learning as Adaptive Interpolation in Neural Fuzzy Systems

Toshio Fukuda	Fuzzy-Neuro-GA Based Intelligent Robotics
Teruo Fujii	Self-Generation of Neural-Net Controller by Training in Natural Environment
Tetsuro Yabuta	Learning Control Aspects in Terms of Neuro-control
Sigeru Omatu	Learning on Neural-Controllers in Intelligent Control Systems
Allen Waxman	Visual Learning of Objects: Neural Models of Shape, Color, Motion and Space
Erkki Oja	Unsupervised Learning for Feature Extraction
Anil K. Jain	Neural Networks and Pattern Recognition
Dave Touretzky	Neural Representations of Space in Rats and Robots
Shiro Usui	Computational Color Vision Model by Neural Networks
Karen Payton	Status of Auditory Modeling Research and its Relationship to Automatic Speech Recognition
Robert Hecht-Nielsen	Neural Network Theory - Early Payoffs and New Challenges
John Moody	Neural Networks for Time Series
Steven K. Rogers	How Captain Amerika Uses Neural Networks to Fight Crime
Rolf Eckmiller	Biology-Inspired Pulse Processing Neural Nets with Adaptive Weights and Delays - Sources from Neuroscience versus Applications in Industry and Medicine
Gerald Tesauro	Why Does TD-Gammon Learn So Well?
Joseph R. Brown	New Paradigms in Technology Transfer
Charles H. Anderson	Neurobiological Computational Systems
Robert A. Wiggins	Neural Computing Technology Transfer - A UK Government Programme
Francoise Fogelman	Integrating Neural Networks for Real World Applications
George Sperling	Visual Preprocessing
Russell C. Eberhart	Biomedical Applications of Computational Intelligence

---

More information about the Symposium, including abstracts of the papers to be presented, is available from Robert Marks, University of Washington. FAX (206)543-3842, email: marks@milton.u.washington.edu. A complete list of WCCI Tutorials will be available from Karen Haines after January 1: karen@orincon.com.

World Congress on Computational Intelligence

International Conference on Neural Networks
FUZZ/IEEE '94
IEEE International Symposium on Evolutionary Computation

EXTENDED DEADLINE December 31, 1993

June 26 - July 2, 1994
Walt Disney World Dolphin Hotel,
Lake Buena Vista, Florida

Sponsored by the IEEE Neural Networks Council

IEEE INTERNATIONAL CONFERENCE ON NEURAL NETWORKS

**General Chair
Steven K. Rogers
United States Air Force
Institute of Technology
rogers@afit.af.mil**

Topics: Applications, architectures, artificially intelligent neural networks, artificial life, associative memory, computational intelligence, cognitive science, embedology, filtering, fuzzy neural systems, hybrid systems, image processing, implementations, intelligent control, learning and memory, machine vision, motion analysis, neurobiology, neurocognition, neurodynamics, optimization, pattern recognition, prediction, robotics, sensation and perception, sensorimotor systems, speech, hearing and language, system identification, supervised and unsupervised learning, tactile sensors, and time series analysis.

FUZZ/IEEE '94

**General Chair
Piero P. Bonissone
General Electric Corporate
Research and Development
bonissone@crd.ge.ge.com**

Topics: Basic principles and foundations of fuzzy logic, relations between fuzzy logic and other approximate reasoning methods, qualitative and approximate-reasoning modeling, hardware implementations of fuzzy- logic algorithms, design, analysis, and synthesis of fuzzy-logic controllers, learning and acquisition of approximate models, relations between fuzzy logic and neural networks, integration of fuzzy logic and neural networks, integration of fuzzy logic and evolutionary computing, and applications.

IEEE CONFERENCE ON EVOLUTIONARY COMPUTATION

**General Chair
Zbigniew Michalewicz
University of North Carolina,
Charlotte
zbyszek@mosaic.uncc.edu**

Topics: Theory of evolutionary computation, evolutionary computation applications, efficiency and robustness comparisons with other direct search algorithms, parallel computer applications, new ideas incorporating further evolutionary principles, artificial life, evolutionary algorithms for computational intelligence, comparisons between different variants of evolutionary algorithms, machine learning applications, evolutionary computation for neural networks, and fuzzy logic in evolutionary algorithms.

INSTRUCTIONS FOR ALL THREE CONFERENCES
Papers must be received by December 31, 1993

Papers will be reviewed by senior researchers in the field, and all authors will be informed of the decisions at the end of the review process. All accepted papers will be published in the Conference Proceedings. Please submit the following:

• Send one original and five copies of the paper. Six total.

•Papers must be camera ready on 8 1/2 x 11 white paper, two-column format in Times or similar font style, 10 points or larger with one inch margins on all four sides.

•Do not fold or staple the original camera-ready copy.

•Four pages are encouraged, however, the paper must not exceed six pages, including figures, tables, and references. Papers over six pages will not be considered.

•Papers must be written in English.

Authors are encouraged to use the WCCI LaTex template with the IEEE transactions style sheet. (The format is similar to that used in IEEE transactions.) These documents can be FTP'd using the following instructions:

```
FTP FTP.AI.SRI.COM
LOGIN: ANONYMOUS
PASSWORD: <USE YOUR E-MAIL
   ADDRESS AS THE PASSWORD)
(AN SRI INFORMATION DOCUMENT
   WILL SCROLL. AFTERWARDS, TYPE...)
CD PUB/IEEE
GET READ.ME
BYE
```

Centered at the top of the first page should be the complete title, author name(s), affiliation(s), and mailing address(es). In the accompanying letter, the following information must be included:

• Full Title of the Paper
•Corresponding Author (Name, Mailing Address, Telephone and FAX Number)
•Technical Session (First and Second Choices)
•Presentation Preferred (Oral or Poster)
•Presenter (Name, Mailing Address, Telephone and FAX Number)

For information and paper submission, mail to:

World Congress on Computational Intelligence
Meeting Management
2603 Main Street, Suite 690 TEL: 714-752-8205
Irvine, California 92714   FAX: 714- 752-7444

E-MAIL:
74710.2266@COMPUSERVE.COM