President's Message

The International Conference on Neural Networks (ICNN) and FUZZ-IEEE '93 combined conferences held in San Francisco were a great success. Enrique Ruspini and his program committees are to be commended. It was obvious that combining the two meetings was a good idea. Many of the attendees in the neural network sessions were active in fuzzy logic work, and vice versa. The proceedings were again offered both on CDROM and as printed volumes.

The Council's next conference is the Virtual Reality Annual International Symposium (VRAIS), being held in Seattle, Washington, in September. Tom Furness, Tom Caudell, Bob Marks and the rest of the organizing committees have been working hard to make this, the first IEEE-sponsored conference focused on virtual reality, an event you won't want to miss if you are working on or interested in the field. The papers being presented are of a high technical quality, and a very interesting group of exhibitors will be present.

In October, the Council will co-sponsor the International Joint Conference on Neural Networks in Nagoya, Japan. Profs. Shun-Ichi Amari and Toshio Fukuda are combining their talents to ensure the success of the first-ever NNC-sponsored conference in Japan. If you have never been to Japan, this is a great opportunity to combine business and pleasure.

Planning is now well along for the World Congress on Computational Intelligence, to be held in Orlando, Florida, in late June, 1994. The congress will include the International Conference on Neural Networks, FUZZ/IEEE '94, and the International Symposium on Evolutionary Computation. It will be held at the same time as the World Cup is in Orlando (the first time it has been held in the United States). The combination of conferences in San

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Robert M. Sanner and Jean-Jacques E. Slotine, have been awarded The Neural Networks Council's Outstanding Paper Award for their paper "Gaussian Networks for Direct Adaptive Control" (IEEE Trans. on Neural Networks, 3(6):837-863, November 1992.)

The Outstanding Paper Award is awarded by the Neural Network Council to the authors of an outstanding paper published in the IEEE Transactions on Neural Networks during the two calendar years preceding the year of the Award. Papers are judged on their potential impact on the foundations of neural network theory, their potential for having a significant practical impact in applications, and on their clarity.

This year's award was made on the basis of recommendations from a committee of associate editors for the Transactions. Selected for honorable mention were the following two papers:


Sanner and Slotine are both affiliated with the Department of Mechanical Engineering at the Massachusetts Institute of Technology (MIT), Cambridge, MA. Professor Slotine is an Associate Professor of Mechanical Engineering and Director of the Nonlinear Systems Laboratory at MIT. Mr. Sanner is currently completing his Ph.D. on adaptive control at MIT.

The award winning paper deals with adaptive neuro-control. To date, there are relatively few results in this area which go beyond empirical studies. This paper provides analytical results on the convergence properties of direct adaptive controllers based on radial basis function networks. The paper's contributions are perceived as being important to the advancement of control theory and neural network theory. In this respect, Sanner and Slotine's paper provides an excellent example of the way in which neural network analysis can successfully address difficult problems in the traditional system sciences.

Michael Lamon, Chairman 1993 Outstanding Paper Award Committee Dept. of Electrical Engineering University of Notre Dame Notre Dame, IN 46556

President's Message (from cover)

Francisco this year is thus being extended to three areas. The Congress hotel is the Walt Disney World Dolphin Hotel, on the Disney property near EPCOT, Disney World and the MGM Studios Theme Park. The Congress is being designed as a family event, with attractions for all ages.

Further information on each of the conferences mentioned above can be found elsewhere in the newsletter, in the Transactions on Neural Networks, and in the Transactions on Fuzzy Systems.

The NNC's Virtual Reality Technology Committee met in San Francisco during the ICNN and FUZZ/IEEE '93. Chaired by Tom Caudell, the committee recommended that the IEEE Technical Activities Board (TAB) establish an IEEE-wide Virtual Reality Technology Committee. The NNC AdCom will act upon this recommendation at its meeting in September at VRAIS '93, and if it is ratified, pass it along to the IEEE TAB at its meeting later this year. If passed by TAB, the field of virtual reality could be on its way to becoming an IEEE Council, similar to the Neural Networks Council.

I support this action, because, like neural networks, fuzzy logic and evolutionary computation, the field of virtual reality cuts across many of the IEEE Society fields of interest. To attempt to remove it from the societies would in my opinion be a mistake. To put it into one Society would also be a mistake. The Neural Networks Council has provided a home for some significant virtual reality activities, but the maturing of such a large field seems to warrant the establishment of a new Council.

July 1993 IEEE Neural Networks Council Connections 3
A pioneer combination of the largest technical conferences in the world devoted to fuzzy systems and neural networks.

In recent years, concepts and methods from the fields of fuzzy systems and neural networks have been increasingly used in combination to develop new systems modeling and analysis techniques and to understand and control a variety of real-world systems. Neural network techniques, for example, have proven to be extremely useful to refine and adjust the possibility distributions that define fuzzy controller and fuzzy signal processing. Conversely, ideas from fuzzy logic have been used to generalize the architecture and learning rules of neural networks. The increasing number of technological applications for both concepts has manifested itself in numerous technical contributions that bridge both disciplines. For example, approximately 20% of the papers presented at the First International Conference on Neural Networks were concerned with combinations of fuzzy logic and neural networks concepts and techniques. The evolving symbiosis of these new technologies and the realization that the two fields are increasingly intertwined motivated the joint, concurrent meeting of two major technical forums: the 1993 IEEE International Conference on Neural Networks (ICNN'93) and the Second IEEE International Conference on Fuzzy Systems (FUZZ-IEEE'93).

San Francisco, California was the venue, from March 28 to April 1, 1993 of these two major meetings sponsored by the IEEE Neural Networks Council. The program format for this combined event allowed participants to either conference to attend all functions and programs of interest to them. Participation in both conferences allowed participants to attend a rich program of tutorials, exhibits, technical sessions, social functions and tours.

The technical programs prepared by the Program Chair of FUZZ-IEEE'93, Dr. Piero P. Bonissone, and by the Program Cochair of ICNN'93, Dr. Hamid Reza Teimouri, were designed to foster interdisciplinary communication in the character of each conference program, for example, two joint sessions, or "superplenary" featuring talks by Professors Lotfi A. Zadeh, Bernard Widrow, Carver Mead, and Tsu-Hui Ohnou. Plenary sessions of ICNN'93 included talks by Dr. Piero Bonissone, Dr. Richard Sutton, Professor Kappas, Narendra, and Professor John Koza while plenary sessions of FUZZ-IEEE'93 included talks by Professor K. Mamoureddi, Professors Michio Sugeno, Dr. Hamid Berenji, and Professors Didier Dubois and Henri Prade. Two of these plenary talks (by Dr. Bonissone and Dr. Berenji) were specially prepared to introduce each community to significant concepts and advances of the other.

Tutorials

The tutorial program of the joint meeting, organized by Professor James Bezdek, also emphasized interdisciplinary themes, ranging from applications of fuzzy logic and neural networks to control systems, computer vision, and pattern recognition to discussions of approaches based on combination of genetic algorithms and neural networks and of expert systems and neural networks. Other tutorials included presentations on basic concepts of fuzzy set theory, neural networks, and evolutionary programming; hardware approaches to fuzzy logic; applications of fuzzy logic to databases and neural networks; and—in keeping with the multidisciplinary orientation of the event—on the role of cognitive-science concepts in neural networks applications.

The technical session program for both conferences included more than 600 contributions, of which approximately 350 were presented at both conferences, while 400 of these conferences, while 400 of these conferences included talks by the Chair of Fuzzy Logic, Piero P. Bonissone, and by the Program Cochair of ICNN'93, Dr. Hamid Berenji, Professor Elie Sanchez, and Professor Shiro Usui, especially designed to foster interdisciplinary communication while maintaining the individual character of each conference program, for example, two joint sessions, or "superplenary" featuring talks by Professors Lotfi A. Zadeh, Bernard Widrow, Carver Mead, and Tsu-Hui Ohnou. Plenary sessions of ICNN'93 included talks by Dr. Piero Bonissone, Dr. Richard Sutton, Professor Kappas, Narendra, and Professor John Koza while plenary sessions of FUZZ-IEEE'93 included talks by Professor K. Mamoureddi, Professors Michio Sugeno, Dr. Hamid Berenji, and Professors Didier Dubois and Henri Prade. Two of these plenary talks (by Dr. Bonissone and Dr. Berenji) were specially prepared to introduce each community to significant concepts and advances of the other.

Exhibits

Nearly 30 exhibitors participated in the joint Exhibit program displaying a variety of products and services ranging from books and software systems to various forms of hardware. "Fluxnet", an autonomous mobile robot developed by SRI International that uses a fuzzy controller, thoroughly and consistently roamed the exhibition floor during coffee breaks, sometimes sporting ICNN'93 and FUZZ-IEEE'93 T-shirts.

Electronic Proceedings

Both ICNN'93 and FUZZ-IEEE'93 followed in the pioneering footsteps of ICNN'92 by producing CD-ROM versions of the Conference Records. These CD-ROM Proceedings, which were produced by Young Minde, Inc. of Redlands, California, may be accessed using a proprietary software package (ViewTool) that supports a wide variety of hardware platforms ranging from personal computers to a variety of engineering workstations.

Practitioner's Workshops

An innovation, introduced in the context of FUZZ-IEEE'93, was the inclusion, as a complement to the technical program, of "Practitioner's Workshops." Practitioner's workshops are informal gatherings intended to describe significant case histories and experiences in the application of a particular technology. The objective of practitioners' workshops is to provide newcomers to the field with significant information about the problems faced by those who successfully accomplished the technological transformation of theoretical ideas into actual commercial and industrial products. The pilot practitioners' workshop for FUZZ-IEEE'93 was organized by Dr. Earl Cox on the topic of commercial and business applications of fuzzy logic.

Video Proceedings

Also appearing for the first time in an NNC-sponsored conference was the first of a planned series of Video Proceedings, which was jointly produced by the NNC and the IEEE Educational Activities Board. Video Proceedings are collections of video segments showing significant research advances that cannot be easily conveyed in other formats. For this initial edition of a joint ICNN/FUZZ-IEEE'93 Video Proceedings, Ariv Bergman, of Interval Research Corporation, and I solicited a number of contributions from leading researchers in the fields of fuzzy logic and neural networks. These clips were edited and combined with narrative explanations about each contribution, and, more generally, about the nature of each discipline and its major problems. The result, produced with the assistance of the Stanford Instructional Television Network, is a new IEEE video entitled "Fuzzy Logic and Neural Networks: Clips from the Field."

The positive participant response to ICNN'92 and FUZZ-IEEE'93 expressed through personal comments and written evaluations is most reassuring indications of the timeliness and value of such joint conferences and a joint meeting are a most rewarding for the efforts devoted by the IEEE volunteers who planned and organized these conferences.

In closing, I would like to thank the Program Chairs of both conferences: Richard Tong, who promptly and diligently took care of our finances; Wei Xu, who organized and promoted the Exhibits Program; Cameron Welch, who handled press and public relations; Andy Worth, who coordinated volunteer activities; Ariv Bergman, who chaired the Video Proceedings effort; Alessandro Saffiotti, who provided valuable real-time assistance and participated in the video effort; Jim Bezdek, for his confidence and for the organization of the tutorial program, and to all members of the Program and Organizing Committees, who made the San Francisco conferences such a big success. Special thanks also go to Noml Feldman and her team at Meeting Management for their skillful organizational support. Finally, all of us involved in ICNN'93 and FUZZ-IEEE'93 are most grateful to Russ Eberhart, Bob Marks, and the Neural Networks Council for their confidence and unwavering support.
The IEEE gets connected

Rosalyn Snyder
Managing Editor, IEEE-NNC Connections

Try it, yourself!

To be listed on the IEEE e-mail directory of an IEEE RIG, all you need is a message with the following information to rosalyn@iee.org:

(a) your e-mail address
(b) your last name
(c) your first name and initial
(d) your day-time phone number
(e) your FAX number (if available)
(f) your IEEE member number (if you are a non-member volunteer, e.g., working on a Standards group, please ask your group chair, who will be an IEEE member, to process your request)
(g) your current major IEEE volunteer activity involvement (committee positions, etc.)

You don’t have to be “in the system” to use it. Here’s how.

info@ieee.org

Mail to this alias gets you a list of about 110 auto-response text files. Each e-mail message (not really a message, but a request using a message format) is sent to an alias that begins with “info,” the message content is discarded and a pre-written text file is automatically returned to the senders.

For example a message to email:guides@ieee.org responds with the latest version of the IEEE e-mail guide.

info.service@ieee.org

Mail to this alias prompts a list of the services provided by email. For instance, if your renewal check was cashed and you received a second bill, mail to membership inquiries@ieee.org, and it will be forwarded to a person who can help you straighten it out! The list includes the 5 directory aliases for volunteers, staff, sections, branches, and societies.

Bob Alden of McMaster University is chair of the IEEE Electronics Steering Committee. Send comments to him at ald@alder.ieee.org. Thanks to IEEE staff Janee Cerezo, who provided details on the IEEE e-mail system.

IEEE Metric Policy Draft

The following is a summary of actions taken at the March 25 meeting of the IEEE Metric Policy Committee. Send comments to: Anne O’Neill, Staff Engineer IEEE Service Center 445 Hoist Lanes PO Box 1331 Piscataway NJ 08855-1331 FAX: 908/562-1571 email: aoneill@ieee.org

The IEEE will:

1. Actively support the use of the SI metric system in electrical and electronics engineering
2. Use SI units exclusively to express measured and calculated values of quantity in all IEEE publications, including standards. * With respect to existing standards, that policy shall take effect with the next revision, with respect to other publications, no later than January 1, 1995.

*It is recognized that certain exceptions to this policy will be necessary (e.g., where a conflicting world industry practice exists). These exceptions must be evaluated and approved by the appropri- ate Institute board on an individual basis, and for a specific period of time, and reported to the Board of Directors.

What we’re looking for are people able to show emotion about engineering, e.g., a friendly excitement about some special idea you have or value you place on the field.

WCCI Publicity Chair

Rick Alan (that’s me) was appointed to head the NNC World Congress on Computational Intelligence Publicity Committee. The Congress is to take place in Orlando next June. If you would like to assist this effort by placing brochures at conferences you will be attending please let me know (e-mail: ralan@ieee.org). I would also be very interested in hearing your suggestions and criticisms regarding how we can provide a Congress that maximizes your satisfaction.

See you there!

To organize a new RIG (Regional Interest Group), contact: Rick Alan, TRW Safety Systems Chair, IEEE-NNC Regional Interest Groups

RIGs Notes

Lotti Zadeh Wows Seattle

Lotti Zadeh visited the Seattle RIG (Colin Wiel, Chairman) in April and drew 104 people. Reports are that it was an exciting presentation (as always). Zadeh visited under the NNC Distin-

guished Lecturer Program.

Phoenix RIG Video

The Phoenix RIG is sponsoring a video, re-creating the actions of engineers in Computational Intelligence (you). It is currently in development. If you have an interest in being interviewed for it, please send a videotape of yourself answering the following three questions:

• What’s the most exciting thing in Computational Intelligence to you?
• What’s the most interesting speculative future development in CI you can think of?
• What is the value of engineering?

Please feel free to include any other material you think may be of interest.

ICNN/FFUZ-IEEE 93

The San Francisco ICNN/FFUZ-IEEE conference was like eating ice cream, and delicious. The RIG Committee was recognized for its successful efforts to promote the field around the world by being upgraded from "ad hoc" to "Standing." The first RIGs luncheon was held with representatives from around the world attending. A splendid time was had by all.

Mo-Yuen Chow Appointed

Dr. Mo-Yuen Chow of the North Carolina RIG has been appointed to the RIG Committee in charge of establishing new Groups worldwide. If you would like to be able to attend RIGs meetings locally, please let him know so he can contact your Section Chairman. The meetings are fun and an excellent investment in your future. Mo-Yuen can be reached at chow@eos.ncsu.edu.
Now in its third year of operation, the Standards Committee of the Neural Networks Council (NNC) invites your participation in its working groups and other activities. IEEE is one of the primary standards organizations in the United States and is currently maintaining over 1500 active standards in the electrical and electronic areas. The IEEE Standards Board has established formal procedures for the initiation of standards projects via Project Authorization Requests (PAR), balloting to approve standards, and for publication of standards. The NNC is represented on the IEEE Standards Board and has made standardization one of its principal activities.

At present three active Working Groups are developing standards in the following areas:

- Definition of Terms for Artificial Neural Networks;
- Guidelines for the Evaluation of Artificial Neural Network Hardware;
- and Software Interfaces for Artificial Neural Networks.

Additional Working Groups interested in Fuzzy Systems and in Virtual Reality are in the process of formation. These groups interact by e-mail and strive to meet once or twice per year at major conferences.

It may be that VR standards will be taken out of the NNC to gain broader participation.

**NCC Standards Committee**

Walter Klauпас, UCLA
Mary Lou Pagdget, Auburn University

For further information, please contact the chair, Professor Walter Klauпас, Vice Chair, Mary Lou Pagdget or any of the working group chairs listed below. Your input is vital to the success of this effort!

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**Standards Calendar**

- **July 19-21, 1993 Summer Computer Simulation Conference SCSC93**
  - Boston meeting with 5CS on "Real Neural Networks and Simulation Standards"
- **September 18-19, 1993 Virtual Reality Annual Intl' Symposium VRAS93**
  - Seattle One day meeting of VR Working Group
- **October 25-29, 1993 IJCNN’93**
  - Nagoya Panel—International Language and Symbolism
  - Tutorial—Neural Network Basics: Applications, Example and Standards
  - Discussion Groups and Social Events
- **November 7-10, 1993 SimTech/WNN**
  - PNNL 93 San Francisco
  - Meetings of all working groups
  - Tutorials, discussions, tour of NASA Ames
  - CONTESTS: papers and software demonstrations

**Conference Report**

First Boston-Area Fuzzy Logic Workshop

On February 25, 1993, the First Boston-Area Fuzzy Logic Workshop was held at GTE Laboratories in Waltham MA, in cooperation with the IEEE Neural Networks Council. This meeting provided a much needed local forum for fuzzy logic researchers, practitioners, and enthusiasts in the greater Boston area. In addition, it served as an initial planning meeting for discussing fuzzy logic applications and events. The inaugural workshop attracted 35 participants, representing 12 companies and 5 universities.

Much credit for the success of this endowment also goes to my organizing committee: John Terrell and Nancy Millstrom from GTE Government Systems, and John Dooley and Judy Franklin from GTE Laboratories, and to the GTE Laboratories support staff.

The technical program consisted of eight invited and submitted talks from the local fuzzy logic research community. These talks addressed a broad range of topics including fuzzy theory and tools, and applied fuzzy techniques in decision support, control, communication network management, signal processing, and information systems.

- **Fuzzy Logic for Bayesians:** Fuzzy Sets as Equivalent Classes of Random Sets (ECORS)
  - According to Fred Davis (Raytheon Company), while ECORS are rather difficult to describe and manipulate in Bayesian formalisms, they are simple primitives in fuzzy logic. This relationship offers to greatly reduce the computational complexity of some estimation algorithms for problems with uncertain origin of measurement (such as multiple target tracking).
- **Using the GD Diagnostic Assistant for Developing Real-time Fuzzy Applications**

- **A Hybrid Neural-Fuzzy Approach to Signal Recognition and Analysis**
  - Nancy Millstrom, GTE Government Systems
  - A novel hybrid architecture for real-time monitoring of the VHF band for interference and unassigned usage. In their design, fuzzy logic is used to enhance traditional FSK detectors and to integrate the FSK results with a neural network classifier. Millstrom described how the fuzzy decision-making techniques provided significant performance improvements as compared to binary logic, and reduced both the number of rules and coding requirements.

Security Issues in Information Systems

- **Fuzzy Logic and Multilevel Database Systems**
  - Bhavani Thuraisingham (MITRE Corporation) described how multilevel security contexts could be incorporated into a fuzzy relational data model. In addition, she noted that illustrated that approximate reasoning could be used in multilevel secure database systems to more effectively handle situations where users needed uncertain information from a series of authorized queries.

- **Using Fuzzy Logic to Resolve Policy Conflicts in Multi-Computer Security Paradigms,**
  - Hilary Homen (Data Security Inc.), reviewed issues in policy security and "metapolicies," and initiated a lively discussion of the potential role of applied fuzziness in this domain.

**Applications Papers**

- **Fuzzy Logic Representation of Knowledge for Detecting/Correcting Network Performance Deficiencies**
  - Linda Lewis (Calabria Systems R&D Center) discussed some of the challenges of "intelligent" communications networking, and provided an insightful view of the potential role of fuzzy models. A traditional approach to fault detection and correction is to construct algorithms that translate the numerical reading of a network monitor into symbolic variables, and then make inferences via expert-derived rules. However, this type of rule-based framework can suffer from "brittleness" and knowledge acquisition problems. As Lewis described, an alternative fuzzy logic approach offers to overcome these two limitations.
World Congress on Computational Intelligence
International Conference on Neural Networks
FUZZ/IEEE '94
IEEE International Symposium on Evolutionary Computation
June 26–July 2, 1994
Walt Disney World Dolphin Hotel,
Lake Buena Vista, Florida
Sponsored by the IEEE Neural Networks Council

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Topics: Applications, architectures, artificially intelligent neural networks, artificial life, association memories, computational theory, control, design, energy, filtering, fuzzy systems, hybrid systems, image processing, implementation, intelligent control, learning and memory, machine vision, motion analysis, neurobiology, neural networks, neuropsychology, optimization, pattern recognition, 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

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, Fuzzy Logic System, and applications.

IEEE INTERNATIONAL CONFERENCE ON NEURAL NETWORKS

Topics: Applications, architectures, artificially intelligent neural networks, artificial life, association memories, computational theory, control, design, energy, filtering, fuzzy systems, hybrid systems, image processing, implementation, intelligent control, learning and memory, machine vision, motion analysis, neurobiology, neural networks, neuropsychology, optimization, pattern recognition, robotics, sensation and perception, sensorimotor systems, speech, hearing and language, system identification, supervised and unsupervised learning, tactile sensors, and time series analysis.

IEEE INTERNATIONAL CONFERENCE ON EVOLUTIONARY COMPUTATION

Topics: Theory of evolutionary computation, evolutionary computation applications, efficiency and robustness comparisons with other direct search algorithms, parallel evolutionary computation, 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 10, 1993. Papers will be reviewed by senior researchers in the field, and all authors will be informed of the results at the end of the review process. All accepted papers will be published in the Conference Proceedings. Six copies (one original and five copies) of the paper must be submitted. Original must be camera ready, on 8.5 x 11-inch white paper, one-column format in Times or similar fontstyle, 10 points or larger with one-inch margin on all four sides. Do not staple or staple the original camera-ready copy. Four pages are encouraged. The paper must not exceed six pages including figures, tables, and references, and should be written in English. 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: 1) Full name of paper, 2) Corresponding authors name, address, telephone and fax numbers, 3) First and second choices of technical session, 4) Preference for oral or poster presentation, and 5) Presenter's name, address, telephone and fax numbers. Mail two copies to:
Papers to (and/or obtain further information from:)
World Congress on Computational Intelligence, Meeting Management, 5665 Obelisk Drive, #110, San Diego, California 92121. USA (email: 70705.345@compuserve.com, telephone: 619-453-6222).

Calendar

If you have any conference details to add to this list, please send (preferably) a Call for Papers to
Paul Bakker
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(+61 7) 3565 9900
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We have decided to include some deadline dates on the official call for papers, since these are sometimes changed. Email or fax submissions are not usually acceptable, please contact the program chair or other contact for submission requests.

The designation [passed] refers to the deadline date.

-Upcoming events (past cutoff)

July 1993

World Congress on Neural Networks (WCNN '93) 11-15 July 1993 Portland, OR, USA [passed] Interdisciplinary; emphasizes the dynamic interplay of neurobiological modeling with advanced engineering and technological applications. Contact: WCNN '93 Technical Program Management Group Inc. (Fax: +1 609 853-0411)

3rd Int'l Conference for Young Computer Scientists (ICYCS '93) 15-17 July 1993 Beijing, China [passed] "Artificial Neural Networks" Contact: liang@cad.uwo.ca (Prof.Chee Lee Ling)
The Fifth Int'l Conference on Genetic Algorithms (ICGA '93) 17-22 July 1993 Urbana-Champaign, USA [passed] "Genetic algorithms and their application to neural networks" Contact: logics@uiuc.edu (program & submissions) rob@cometsui.msb.uiuc.edu (general)

19th Annual Conference on Computer Systems and Applied Mathematics 19-23 July 1993 St. Petersburg, [May 93] "Neural nets" Contact: sergej@udc.uasj.org (Dr. Sergey S. Voitsekh)

Annual Conference of Japanese Neural Network Society 21-23 July 1993 Izu, Japan [passed] "Neuroscience, Cognitive Science, Models & Algorithms, Hardware, Application" Contact: ya@ics.kyutech.ac.jp (Prof. Shozo Yamauchi)

Simulating Societies '93 24-26 July 1993 Siena, Italy [passed] "Approaches to simulating societies of complex social processes" Contact: greg@soc.mturk.unc.edu (Prof Niel Gilbert)

Asia-Pacific Workshop on Advances in Motion Control 26-27 July 1993 Singapore [passed] "Neural Network, Fuzzy Systems and Expert Systems in Motion Control" Contact: elecette@nsmu.bitnet (Dr. T. H. Lee)

August 1993

Second Annual Computation and Neural Systems Meeting (CNS '93) 31-Jul-Aug 1993 Washington, D.C., USA [passed] Contact: cpen@sunsite.unc.edu (Chula Phongpan)

XIX Latin American Informatics Conference 2-6 Aug 1993 Buenos Aires, Argentina [passed] "Connectionism and Neural Networks Contact: mendoz@fb.itb.edu.ar (Alberto Mendeles)

The 5th University of New Brunswick AI Symposium (Theme: "Are We Moving Ahead") 11-14 Aug 1993 Fredericton, Canada [passed] "Vision, Learning, Knowledge Representation, Cognitive Science" Contact: golda@unb.ca (Lev Goldfarb)

Neural Network Applications to Signal Processing (NANS'93) 17-20 Aug 1993 Singapore [30 Apr 93] "Speech recognition, image processing, adaptive filtering" Contact: NANS'93 Secretariat (Fax: +65 292 8596)


8th IEEE Int'l Symposium on Intelligent Control 25-27 Aug 1993 Chicago, IL, USA [passed] "Neural networks & neural control" Contact: fairel@diaper.com (Jay A. Parrella)

Int'l Joint Conference on Artificial Intelligence (IJCAI '93) 29 Aug-3 Sep 1993 Chambaniss, IV [passed] Contact: www.ijcai.org (general)

September 1993

Int'l Workshop on Neural Networks for Signal Processing 7-9 Sep 1993 Baltimore, MD, USA [passed] Contact: Karin Cerimele karin@learning.ter insomnia or september@ucl.ac.uk (Special Session: Applications of Neural Networks to Computer Vision) Contact: dominique@v1002.decnet.cailliffr.

International Workshop on Applications of Neural Networks to Telecommunications 18-20 Oct 1993 Piscatway, NJ [14 May 93] Contact: tony@bellcom.com (Tony Cerimele)

Int'l Conference on Artificial Neural Networks (ICANN '93) 13-16 Sep 1993 Amsterdam, Holland [passed] "Principles from neurobiology: Physical & mathematical theories: Cognitive connections; Robotics; Application" Contact: iain@neurosys.kun.nl

16th Int'l Symposium on Fuzzy Set Theory 15-19 Sep 93, Linz, Austria [May 1993] Contact: k51257@edw.univ-linz.ac.at

(Erich Peter Klement)

-Jan' Int'l Symposium on Computer Technology, Systems, and Applications (ICSTICS '93) 15-17 Sep 1993 Singapore [passed] "Integrated Circuits and Artifical Neural Networks Contact: NTU@OPTIMA.XNET.BTNET (Ms Annabel Ooi)

Virtual Reality Annual Int'l Symposium (VRAIS '93) 18-22 Sep 1993 Seattle, WA, USA [passed] "Technical work in virtual reality technology: Neural networks, artificial intelligence, fuzzy logic, parallel processing Contact: Management Meeting, San Diego, California (Fax: +1 619 535 3880)

Artificial Intelligence Technology Transfer Conference 22-24 Sep 1993 Monterrey, Mexico [passed] "All techniques such as neural networks, fuzzy systems, computer systems" Contact: ntai@ntai.org (Roger E. Stone)

Sensors '93 20-26 Sep '93 Brisbane, Czech, 31 May 1993 (abstracts) "Theory and applications of artificial neural networks Contact: el1@bitrr (Mirko Novak)

October 1993

Jan' Int'l Conference on Signal Processing Applications & Technology (ISPAT '93) 28-30 Oct 1993 Santa Clara, CA, USA [30 Apr 93] "Neural Networks, Parallel Processing Contact: (Annon Alphonse) DSPWorld@world.std.com

Workshop on Integration Technology for Real-Time Intelligent Control Systems (RTICS '93) 5-7 Oct 1993 Madrid, Spain [passed] "Integrating Expert Systems, Neural Networks, Fuzzy Logic" Contact: CHOZZ0@eciscun.cn (Barbara Cortesa)

IEEE SMC'93 Conference 17-20 Oct 1993 Le Touquet, France [passed] "Special Session: Applications of Neural Networks to Control System Design" Contact: dominique@v1002.decnet.cailliffr.

International Workshop on Applications of Neural Networks to Telecommunications 18-20 Oct 1993 Piscatway, NJ [14 May 93] Contact: tony@bellcom.com (Tony Cerimele)

Int'l Workshop on Applications of Artificial Neural Networks to Telecommunications 18-20 Oct 93 Piscatway, NJ, USA [14 May 93] (symposium) "Speech Recognition, Fraud Detection, Financial and Market Prediction" Contact: bg@falins.bellcom.com (Bobby Greer)

NCS-JICNN Student Travel Grants

The AdCom has approved funds for a limited number of travel fellowships for students who are presenting papers at IJCNN93 in Nagoya, Japan, October 25-29, 1993. For application information contact:

Karen Haines
Education Committee Chair
2466 Newport Ave.
Cardiff CA 92007
619-436-7314

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NIST Data Base

The National Institute of Standards announces a new database, NIST Special Database 4, which contains -bit gray scale fingerprint images. Images are obtained, contact Joan S. Wu, NIST, 301-975-2208, FAX 301-926-2261. For technical information, contact Craig Wancan, 301-975-4460, craigw@nist.gov.

New Journals

NeuroVes Journal
Scheduled to begin publication in September 1993, this journal focuses on applying neural networks and emerging technologies to inventing and testing in the markets. Charter subscriptions will include 10 years of free stock market data. Contact Agnes Caldwell, 703-754-0696.

AIJ Journal of Engineering Intelligent Systems for Electrical Engineering and Communications
The major areas of applications for this journal are electrical engineering, electric power systems and communications. The Editor in Chief is T. S. Dillon, and the journal will be published quarterly, beginning in May 1993. Contact Editorial Department, CRL Publishing Ltd., PO Box 140, Aldershot UK. (Ed. note: No phone or FAX numbers, or e-mail addresses were included.)

IEEE Fuzzy Logic and Neural Networks: CLIPS FROM THE FIELD

A unique collection of video clips featuring significant applications and developments in the fields of fuzzy logic and neural networks. These clips include pioneering applications and significant developments in each of these fields and advances resulting from combined application of their methods.

Narrative explanations, describing the nature of underlying techniques, have been incorporated in this volume to further enhance the value of its segments, contributed to the Second IEEE International Conference on Fuzzy Systems (FUZZ-IEEE '93) and to the 1993 IEEE International Conference on Neural Networks (ICNN '93).
NNC-Endorsed Meetings

The Neural Networks Council has agreed to be a "technical co-sponsor" or "cooperating organization" for the meetings listed below.*

<table>
<thead>
<tr>
<th>Name</th>
<th>Site</th>
<th>Date</th>
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<tbody>
<tr>
<td>WNN '93</td>
<td>San Francisco CA</td>
<td>Nov. 7-10 '93</td>
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<tr>
<td>Intelligent Vehicles'93</td>
<td>Tokyo</td>
<td>July 14-16 '93</td>
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<td>ICANN93</td>
<td>Amsterdam</td>
<td>Sept. 13-17 '93</td>
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<tr>
<td>IEEE Wkshop on Neural Networks for Signal Processing</td>
<td>Linthicum MD</td>
<td>Sept. 7-9 '93</td>
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<tr>
<td>ETFA'93: 2nd IEEE Int'l Wkshop on Emerging Technologies for Factory Automation, Design &amp; Operation of Intelligent Factories</td>
<td>Cairns, Australia</td>
<td>Sept 27-29 '93</td>
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<tr>
<td>993 IEEE/Nagoya Univ. WWW on Learning and Adaptive Systems</td>
<td>Nagoya, Japan</td>
<td>Oct. 22-23 '93</td>
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<tr>
<td>1993 IEEE/Nagoya Univ. WWW on Multiple and Distributed Robotic Systems</td>
<td>Nagoya, Japan</td>
<td>Oct. 22-23 '93</td>
</tr>
<tr>
<td>Int'l Conf.on Neural Networks &amp; Signal Processing</td>
<td>Guangzhou, China</td>
<td>Nov. 2-5 '93</td>
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<td>2nd IEEE Int'l Wkshop on Robots &amp; Human Communication</td>
<td>Tokyo</td>
<td>Nov. 3-5 '93</td>
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<td>1993 Int'l Symp. on Nonlinear Theory &amp; its Applications</td>
<td>Hawaii</td>
<td>Dec. 6-9 '93</td>
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* The NNC has agreed to be named in the Call for Papers and other promotional materials for these meetings, but the Council does not have a financial interest. Conference organizers who wish to list the NNC as a cooperating or technical co-sponsor should contact James Bezdek, Chairman of the NNC Meetings Committee for information on the approval process. (email: jbezdek@sun.fbitnet; Tel: (904)474-2784; FAX (904)484-3023.)

IEEE Neural Networks Council
Dr. Wesley E. Snyder Editor
Bowman Gray School of Medicine

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