IN THIS ISSUE

President's Message, R. Eberhart ........................................... 3
What Do IEEE Members Want From Their Society? T. Nagle ......... 4
IEEE Neural Networks Council Pioneers .................................... 5
New Fellows of the IEEE, B. Dickinson ...................................... 6
Standards Committee Report, W. Karplus and M.L. Padgett ....... 7
RIGs Notes, R. Alan ..................................................................... 8
Calendar, P. Bakker ....................................................................... 11

Russ Eberhart, Zong Sha, Chairman of IJCNN Beijing, and Bob Marks
(photo courtesy of Bob Marks)

IEEE Neural Networks Council Constituent Societies

- Circuits and Systems Society
- Communications Society
- Computer Society
- Control Systems Society
- Industrial Electronics Society
- Industry Applications Society
- Information Theory Society
- Lasers and Electro-Optics Society
- Oceanic Engineering Society
- Power Engineering Society
- Robotics and Automation Society
- Signal Processing Society

Officers and Committee Chairs

Council President: Russell C. Eberhart,
Research Triangle Institute
Vice President: Patrick K. Simpson
Orincon, Inc.
Past President: Robert J. Marks II, Univ. of Washington
Secretary: Toshio Fukuda, Nagoya Univ
Treasurer: Roy S. Nutter, West Virginia Univ.
IEEE Trans. on Neural Networks Editor:
Robert J. Marks II
IEEE Trans on Fuzzy Systems Editor: James Bezdek, University of West Florida

Standing Committee Chairs:
Meetings: James Bezdek, Univ. West Florida
Standards: Walter Karplus, UCLA
Publications: Stamatis Kartalopoulos, AT&T Bell Laboratories
Fellows Committee: Robert W. Newcomb, University of Maryland
Awards: Bradley Dickinson, Princeton Univ.

Connections Newsletter

Connections is published quarterly by the
Institute of Electrical and Electronics Engineers for individual subscribers to the IEEE
Transactions on Neural Networks.
Newsletter Editor: Wesley E. Snyder
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IN 1994
THE INTELLIGENT WORLD IS
COMING TO ORLANDO...

President's Message
Russell C. Eberhart
Research Triangle Institute

Systems Conference, and the 1994
Conference on Evolutionary Com-
putation (CEC). The event will be
held at the Walt Disney World Dol-
phin Hotel in Florida, from June 26
until July 1, 1994. It will occur dur-
ing the World Cup Soccer competi-
tion which is being held in Orlando
(the first time it has ever been held in
the United States). The Congress
Director General is Charles Robin-
sion. The three Conference General
Chairmen are Steve Rogers (ICNN),
Piero Bonissone (FUZZ/IEEE '94)
and Mike Michalewicz (CEC). You
will be able to attend all three con-
ferences for one registration fee.

The Neural Networks Council
now has fifteen Member Societies.
The latest to affiliate is the Social
Implications of Technology Soci-
ety. I'd like to welcome the Society,
and its AdCom representatives Don
Wunsch and Rick Alan, to the Coun-
cil.

This President's Message is
being written just a few weeks before
the joint ICNN and FUZZ/IEEE
conferences in San Francisco. This is
the first time we have combined these
meetings, and the synergism between
the neural network and fuzzy system
technologies guarantees an exciting
event. General Chairman Enrique
Ruspini has done a great job in what
have been at times difficult circum-
stances that included a change in
venue.

This September, the NNC will
sponsor the Virtual Reality Annual
International Symposium in Seat-
tle, Washington. General Chairman
Tom Furness and Program Chair-
man Tom Caudell, assisted by an
able conference committee, have
assembled what will almost certainly
be the most comprehensive technical
meeting ever presented in the exci-
ting emerging area of virtual reality.
I am pleased to announce that the
IEEE NNC Virtual Reality
Technology Committee has been
established. The President of each
IEEE Society that is a member of the
NNC has been invited to appoint one
voting member to the committee. I
have appointed Dr. Tom Caudell of
Boeing Computer Services in Seat-
tle, Washington, as the committee's
chairman. The purpose of the com-
mittee is to examine how the IEEE
can best serve its members who are
involved in VR technology, and
make specific recommendations for
actions by the NNC. A subcommittee
of the NNC Standards Committee is
being established for VR technology.

I encourage you to attend the
International Joint Conference on
Neural Networks (ICCNN) being
held this October in Nagoya, Japan.
This will be the Neural Network
Council's first major conference in
Japan, and we are excited about the
opportunity to learn more about what
is happening in neural networks in
Asia. Profs. Tosio Fukuda and
Shun-ichi Amari are headed up a
hard-working conference committee.
Just prior to the ICNN, two work-
shops are being held for which the
NNC is technical co-sponsor. One
focuses on learning and adaptive sys-
tems, the other on multiple and dis-
tributed robotic systems.

In 1994, the Neural Networks
Council is sponsoring a landmark
event, the World Congress on Com-
nutational Intelligence. This exci-
ting congress will include three major
conferences: The International
Conference on Neural Networks
(ICNN), the FUZZ/IEEE '94 Fuzzy

FUZZ-IEEE
International Conference on Neural Networks
International Symposium on Evolutionary Computation

WORLD CONGRESS '94 • WORLD CUP
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WALT DISNEY WORLD DOLPHIN HOTEL
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Meeting Management
5067 Orleans Drive, #110
San Diego, California 92123
619-456-6222

Sponsored by the Neural Networks Council
What Do IEEE Members Want from Their Institute?

Troy Nagle
North Carolina State University
IEEE President-Elect

What can we do today to help IEEE better serve its members in the rest of this decade? Which products and services should the Institute provide to its members? What services do the members really want? Can we provide them with these services and keep the member dues at current levels? These are a few of the questions that every new IEEE President faces. I will be addressing these questions during my upcoming three-year term on the IEEE Board of Directors and Executive Committee.

THE MAJOR CHALLENGE

I believe that the major challenge for IEEE is member retention. The table below summarizes the number of members in various categories that drop their IEEE membership each year:

| Category | Arrrivals | Attractions | Losses | Attractions
|----------|-----------|-------------|--------|-------------
| Category | % | Fellows | 5 | Senior Members | 1.2 | Members | 18 | Institute Average | 13 | Associates | 20 | Student Members | 28 | Recent Graduates | 50 |

About 30% of the students enrolled in electrical and computer engineering programs join IEEE. Why do we lose half of these new members in their graduation year? The most common reasons stated by those who drop their memberships are: Doesn't contain much value relative to the perceived value of membership. Many believe IEEE is solely a professional organization (versus a technical one). Others think that membership won't help them progress in their careers. A frequent complaint is that IEEE journals are too theoretical. Many employers discourage participation because they think participation in IEEE will take them away from their jobs. Young engineers complain that IEEE provides no special services, benefits, or publications for them.

If IEEE is to achieve a more prominent position in the profession, we must convince these new members to remain with IEEE. I hope to improve the Institute's ability to provide services to these young members. Here are a few of my personal goals for the period 1993-1995:

- PERSONAL GOALS

  - Create a new perception among students that IEEE is essential for career success. This is the most important thing I could accomplish during my term of office.
  - Increase emphasis on Continuing Education at all levels in the Institute. By providing a greatly expanded selection of educational materials, IEEE members will be able to keep their job skills at peak performance levels. Keeping our members competitive in the job market is a high priority.
  - Make the Section/Chapter a "continuing education" group in the eyes of IEEE members. Our Section/Chapters have been underutilized as a resource in achieving continuing education for our members.
  - Make IEEE Press the publisher of choice for IEEE-member authors. A strong IEEE Press will bring many new books to our membership at discounted prices.
  - Increase IEEE entity involvement in environmental issues. There is international concern for a clean environment among IEEE members. We should join in efforts to make our products and service environmentally safe.
  - Improve mechanisms to measure member satisfaction. The Institute does not have effective methods to measure member satisfaction. If members are dissatisfied, they stop paying their dues. We must develop methods to reach these members before they drop out of the organization.

- PRODUCTS AND SERVICES

  In order to provide better services to our members, I have been investigating several possible new products and services.

- Continuing Education

  In the Continuing Education area, we are considering having IEEE develop under contract a series of new courses for major industries. These courses would be made available to all IEEE members. Another initiative is underway to find ways for IEEE to assist the University of California's Biological University to team in joint continuing education courses. NTU has an international satellite broadcast network to more than 450 locations in companies and universities.

- Member Networks

  Another idea under exploration is the concept of establishing new entities within the Institute (jointly sponsored by TAB and USAJ) that IEEE members can join, similar to our existing Technical Societies. For example, we could create a Consultants Network, an Entrepreneurs Network, an Inventors Network, or a Young Engineers Network. Other examples might be design and applications entities such as a Digital Design Group, an Analog Circuits Group, or a Quality Control Group.

- CD-ROM Products

  The Technical Activities Board and its Societies are developing new CD-ROM products such as conferences proceedings on CD-ROM, publications, and technical compendia. Another idea under consideration is the establishment of IEEE Member/Expert Database. The Technical Societies would compile the materials for the databases and the IEEE would publish the materials and make them available to industrial and other professionals, member medical and legal organizations.

- Student Services and Programs

  Students have been underutilized as a resource in education for our members, so we must make IEEE Press the publisher of choice for IEEE-member authors. An IEEE Press will bring many new books to our membership at discounted prices. The IEEE should consider a major initiative in Continuing Education. IEEE is unique among professional organizations in being able to provide continuing education courses at the graduate level online. The IEEE should also increase its involvement in environmental issues. There is international concern for a clean environment among IEEE members. We must develop methods to reach these members before they drop out of the organization.

1992 IEEE Neural Networks Council Prize Awarders

Professor Shun-ichi Amari, Professor Walter J. Freeman, and Dr. David J. Willshaw were selected to receive the second annual 1992 IEEE Neural Networks Council Pioneer Awards. Presentations were made to Professors Amari and Freeman at 1992 International Joint Conference on Neural Networks in Baltimore, Maryland in June. Professor Willshaw received his award at ICNN-Beijing in November.

The IEEE Neural Networks Council Pioneer Awards recognize and honor the vision of those pioneers whose efforts resulted in significant contributions to the early concepts and developments in the neural networks field. The Pioneer Award, is presented annually to outstanding individuals for contributions made at least fifteen years earlier. Previous recipients of the Pioneer Awards are Stephen Grossberg, Teuvo Kohonen, and Bernard Widrow.

The three individuals receiving Pioneer Awards in 1992 are internationally recognized experts who not only made pioneering technical contributions, but who are also currently active in research and technical leadership in the neural networks field.

Shun-ichi Amari is honored for his work on learning in multi-layer neural networks, and for his theory of statistical neurodynamics. Dr. Amari is a Professor with the Faculty of Engineering at the University of Tokyo. He received the B.Eng. and Dr.Eng. degrees from the University of Tokyo in 1958 and 1963, respectively. He was a faculty member at Kyushu University from 1963 to 1967, since then he has been on the faculty at the University of Tokyo.

Walter J. Freeman is honored for his pioneering work contributing to the development of dynamical systems--arguably one of the most influential groups of models in the neurosciences--of brains, of hearts, and of many other biological systems.

David J. Willshaw is honored for his work on associative memory networks and for his studies of topographic map development. Dr. Willshaw holds an appointment on the Scientific Staff, Medical Research Council, at the Centre for Cognitive Science, University of Edinburgh. He received the B.A. from Cambridge University in 1960, the Ph.D. in 1971 from the University of Edinburgh, and he also received an M.D. degree from University College London in 1971.

His pioneering work includes studies of the capacity of associative memory networks and the efficiency of sparse codes; he also studied the application of Hebbian plasticity to the problem of topographic map development in the optic tectum, inspiring much further work on the processes of nervous system development and organization.
New Fellows of the IEEE

We are pleased to announce the 17 members of the Neural Networks community who have recently been elected Fellows of the IEEE. An honor bestowed each year on fewer than a tenth of one percent of the membership of the IEEE. The nomi-
nation of Tervo Kohonen, who was recognized last year with one of the first NNC awards, was evaluated by the Neural Networks Council. The others were evaluated by 11 different

societies, which reflects the diversity of applications of Neural Networks and other aspects of Computational Intelligence. Several of these new Fellows have been very active in the Neural Net-

works Council as well as many of their member societies, serving as AdCom members and officers, editors and reviewers for NNC journals, and organizing conferences, to mention just a few of their other contributions. Congratulations to each of you!

Suresh M. Joshi, Senior Research
Scientist at NASA's Langley
Research Center in Hampton, Vir-
ginia. Evaluation: Aerospace and
Electronics Systems Society. Cita-
tion: Contributions to the analysis
and synthesis of control systems for
large flexible spacecraft and for
leadership in developing design
methodologies for advanced space
systems.

Salem A. Kastum, Professor and
Chairman of the Department of the
Boise State Electrical Engineer-
ing, University of Pennsylvania, in
Philadelphia, PA. Evaluation: Infor-
mation Theory Society. Citation:
Contributions to the theory and
application of signal detection and
estimation.

Teuvo Kohonen, Professor of Com-
puter Science, Helsinki University
of Technology, Finland, and
Research Professor of the Academy
of Finland. Evaluation: Neural Net-
works Council. Citation: Contributions to and leadership in the field of artificial neural networks and associative memories.

David E. Orin, Professor of Elec-
trical Engineering at the Ohio State
University. Evaluation: Robotics
and Automation Society. Citation:
Contributions to the computation
of robot kinematics and dynamics.

C. S. George Lee, Professor of
Electrical Engineering, School of
Electrical Engineering, Purdue
University. Evaluation: Robotics
and Automation Society. Citation:
Contributions to computational
algorithms and architectures in
robot kinematics and dynamics, and
for leadership in robotics educa-
tion.

Jens A. Nossek, Professor for Cir-
cuit Theory and Design, Technical
University of Munich. Evaluation:
Circuits and Systems Society. Cita-
tion: Contributions to the design of
discrete-time networks and for
technical leadership in the develop-
ment of radio communication sys-

Texas A&M University, Morgantown.
Evaluation: the Industry Applica-
tions Society. Citation: For
introducing the microprocessor and
advanced computer technology to
applications in the mining industry.

IEEE-NNC Standards Committee Report

The Standards Committee is now
active in many areas. Many people
responded to our efforts with sugges-
tions and offers to help. All this increas-
ests the effectiveness of the standards
groups and directs us in appropriate endeavors. Most suggestions were received in one or
more of the areas of interest are needed, so please contact us stating your interests and
concerns.

Two groups, the Working Group on
Glossary and Symbols and the Work-
ing Group on Performance Measure
Methodology have Project Authoriza-
tion Requests (PARs) approved by the
IEEE Standards Board. In addition, the
Software Interoperability Ad Hoc Working Group is in the process of drafting a
PAR. The status of these and other
groups is summarized below.

• Beijing Workshop

The panel discussion on the forma-
tion of an international language
and symbols for artificial neural networks was well attended and generated enthusi-
asm carrying over to this year. Panelists suggested problem areas in communica-
tions to be addressed in the attempts to formulate a coherent set of terms to aid
communication among people of differ-
ent nations as well as those from differ-
cent technical backgrounds. Some of
the common misunderstandings that arise from our current, informal usage of neu-
ral network terms were highlighted.

Suggestions for a hierarchy of
glossaries and appendices were made
and welcomed by the committee, headed by Waldemar J. Kastum. A CLA. Action is
being taken to incorporate these sugges-
tions into the existing draft glossary, and to include supplemental information in
the appendices. Clearly, this is a project
that will grow through the years.

Panelists and contributors to the discussion include: Russell Eberhart, RTI, Robert J. Marks, U. of Washington, Harold Szu, NSC; Paul Werbon, NSF; Sharo Usui, Toyota U. T; Yanqiong Li, Beijing U. Last of the CLA. Action is
being taken to incorporate these sugges-
tions into the existing draft glossary, and to include supplemental information in
the appendices. Clearly, this is a project
that will grow through the years.

Panelists and contributors to the discussion include: Russell Eberhart, RTI, Robert J. Marks, U. of Washington, Harold Szu, NSC; Paul Werbon, NSF; Sharo Usui, Toyota U. T; Yanqiong Li, Beijing U. Last of the CLA. Action is
being taken to incorporate these sugges-
tions into the existing draft glossary, and to include supplemental information in
the appendices. Clearly, this is a project
that will grow through the years.

Performance Methodology

The Performance working group, chaired by Dr. Robert Shelton, NASA Johnson, Space Center, is charged with devising benchmarks for assessing the speed and accuracy of neural network implementations. These benchmarks will take the form of standard data sets for processing along with a "use" docu-
ment to define the test for which the
data would be appropriate. The standard activities will include sections to which
the interested public is invited. In par-
cular, those with opinions concerning
the composition of useful benchmark data
sets are especially encouraged to attend one of the working group meetings and/or consider becoming a member of the performance working group.

There will be panel which is designed to test neural network capabilities and
another designed to stimulate paper contributions in the area of comparative per-
formance. The papers may address comparable paradigms, configuration consider-
ations and/or comparative computa-
tional AI techniques including fuzzy
systems and genetic algorithms. Papers

IEEE Neural Networks Council

February/March 1993

IEEE Standards Calendar
March 28 - April 1, 1993
IEEE-ICNN 1993/IEEE-FUZZ
1993 San Francisco
Sunday, March 28, 1993
2:00-4:30 PM Standards Open
House (Come and Go)

Monday, March 29, 1993
7:00-8:00 PM Standards Overview
8:00-10:00 PM Working Group
Individual Meetings

Tuesday, March 30, 1993
7:00-10:00 PM Working Group
Individual Meetings
(break for conference reception)

July 19-21, 1993 Summer
Computer Simulation
Conference (SCSC) Boston
Joint meeting with SCS on Neural
Networks and Simulation

October 25-29, 1993 IJCNN’93
Nagoya
Panel on International Language
and Symbolism

November 7-10, 1993 SimTel/
WN/FFN 93 San Francisco
Meetings of all working groups,
Tutorials, discussions, tours of
IEEE/NASA/AMES.

February/March 1993

IEEE Neural Networks Council

Clifford Law, Scientific Officer, Elec-
tronics Division, Office of
Naval Research (ONR), Evaluation:
Circuits and Systems Society. Cita-
tion: Technical and managerial contribu-
tions in neural networks and
electronic system reliability.
RIG Notes

Rick Alan
TRW Safety Systems
Chair, IEEE-NNC Regional Interest Groups

New Pacific Rim RIGs!
Korea, Hong Kong, South Australia and Seattle, Washington are the newest members of the RIGs family. The Chairmen are:

• Korea RIG
Cheol Hoon Park
Korea Advanced Institute of Science and Technology
Dept. of Electrical Engineering
373-Kong-dong Yangsung-gu
Pajon 305-701
chp@ee.kain.tae.ac.kr didadek.kain.ac.kr

• Hong Kong RIG
Kwan F. Cheung
The Hong Kong University of Science and Technology
Clear Water Bay
Kowloon
Hong Kong
ekewat@ust.hk

• Southern Australia
D. Nandagopal
Guided Weapons Division
P.O. Box 1500
Salisbury 5108
Australia
nan@dston3.dstonoz.au

and demonstrations will be presented at San Diego/NWNNP 93. Details for sub-
mittance of candidate problems and con-
tent specifics can be obtained from the

group chairman:

Robert Shelton
Software Technology Branch (PT4)
NASA Johnson Space Center
Houston, TX 77058
(713) 483-5901 PAX (713) 244-5698
shelton@gothicity.jsc.nasa.gov

• Software & Hardware Interfaces

The Working Group on Software and Hardware Interfaces met at SimTel/ NWNNP 93 in Houston, near NASA/JSC, and briefly at NIPS. Plans were laid to draft a PAR in the software interfaces

Dr. Hamid K. Brown, Software
SubGroup Chair
Dept. of Electrical Engineering
Florida Institute of Technology
Melbourne, FL 32901-6989
P: (407) 768-8000 x 7756
F: (407) 984-8641 hkb@ee.fit.edu

Fuzzy Systems

The IEEE-PFUZZ 1993 meeting in San Francisco, March 28-April 1, 1993 will mark the beginning of the group on Fuzzy Systems Glossary. Following sug-
gestions by Lotfi Zadeh, Bart Kosko and other leaders in the field, the group will be led by

Dr. Hamid Berenji, Chair
AI Branch, MS-269
NASA Ames Research Center
Moffett Field, CA 94035
P: (415) 604-6070

Conrad Miller, Chair, IEEE NNC
We strongly recommend that the

PCF (Please catalog this for)

be added to your reference library.

LERNING IN EMBEDDED SYSTEMS
Leslie Pack Kaelbling

"This is likely to become a foundational, problem-establishing book in the rapidly growing area of reinforcement learning. It includes significant new results, is well-articulated and, and includes excellent references and coverage of related work." — Richard S. Sutton, GTR Laboratories Incorporated
A Bradford Book 240 pp. $29.95 (May)

NEURAL NETWORK LEARNING AND EXPERT SYSTEMS
Stephen I. Gallant

"A gold mine for researchers working on learning algorithms and computer professionals who want to use them." — Marie Wards, University of Ottawa
A Bradford Book 304 pp., 156 illus. $45.00 (May)

SUBSYMBOLIC NATURAL LANGUAGE PROCESSING
An Integrated Model of Scripts, Lexicon, and Memory
Risto Mikkulainen

"Risto Mikkulainen draws on recent connectionist work in language comprehension to create a model that can understand natural language. Neural Network Modeling and Connectionism series. A Bradford Book 422 pp., 129 illus. $45.00 (April)

NEURAL NETWORKS FOR VISION AND IMAGE ANALYSIS
edited by Carl A. Carpenter and Steven Grossberg
A Bradford Book 504 pp. 20 illus. $55.00 (May)

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A Bradford Book 504 pp. 20 illus. $55.00 (May)

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WHAT IS COGNITIVE SCIENCE?
Barbara Van Eckardt

"This is the book on the foundations of cognitive science." — Owen Flanagan

"The Computional Brain is a major

contribution." — Carmen Merris, California Institute of Technology

Computational Neuroscience Series 344 pp. 365 illus. $39.95 (April)

To order books call toll-free 1-800-356-0343 or (617) 628-8567.
Calendrier

Paul Bakker of the University of Queensland, Australia, has compiled the following upcoming conferences and workshops in Artificial Neural Networks (ANNs) and related fields. He has set up a forum to circulate this information, and invites anyone interested to join the listserv to receive future announcements.

**IEEE International Workshop on Neuro-Fuzzy Control: Instrumentation, Control Applications, Muraon, JAPAN, 22-24 March, 1993 - passed - Title: "Real-world applications and recent theoretical developments applicable to current applications." Contact: spie@nestie.wwu.edu

**SPIE Science of Artificial Neural Networks IV, 22-24 April 1993, San Francisco, USA - passed - Title: "Real-world applications and recent theoretical developments in ANN." Contact: spie@nestie.wwu.edu

**IEEE Int’l Conf on Neural Networks (IJCNN ’93), 26-30 Apr 1993, San Francisco, CA, USA - passed - Title: "Relations between Fuzzy Logic and Neural Networks." Contact: Meeting Management, San Diego, California (Fax: +1 619 535 3880)

**IEEE Int’l Conf, on Neural Networks, 1993 (IJCNN ’93), 29-3 Apr 1993, San Francisco, CA, USA - passed - Title: "Neural networks that must describe applicability to space-related problems." Contact: mccre@kong.gmu.edu

**IMACS Symposium on Signal Processing and Neural Networks, 10-12 June 1993, Paris, France - passed - Title: "Neural networks methods." Contact: J.-P. Berrut, ENSCP, UEDU (Professor W.P. Ljung)

**CBMS ’93: 6th IEEE Symposium on Computer Arithmetic, 13-15 June 1993, Austin, TX, USA - passed - Title: "Computer Arithmetic and Neural Networks." Contact: Prof. K. Hira, Dept Instrument & Control Engg., Engineering, Hosting University, Université du Maine, 72031, France, Tel: +44 944 95445, 044 954 7912 (Japan) Tel/Fax 81 44 33 12 12

**IEEE Int’l Conf on Fuzzy and Intelligent Technologies, 6-10 June 1993, Munich, Germany - passed - Title: "Principles from neurobiology; Physical & mathematical theories; Cognitive connections; Robotics; Applications" Contact: icann@hb.dmu.west.de

**IEEE Int’l Conf on Artificial Neural Networks (ICANN’93), 13-16 Sept 1993, Amsterdam, Netherlands - passed - Title: "Recent developments in neurobiology with advanced engineering and technological applications." Contact: WC’93, Dept. Computer Science, Solvay University, P.O.Box 1142, Seoul, 100-611 Korea, email: kwo@kog.net

**World Congress on Neural Networks (WCNN’93), 11-13 July 1993, Portland, OR, USA - passed - Title: "Massive parallel systems, neural networks, parallel algorithms" Contact: WC’93, Dept. Computer Science, Solvay University, P.O.Box 1142, Seoul, 100-611 Korea, email: kwo@kog.net

**SPIE Int’l Conf, on Neural Networks, 28-30 Apr 1993, San Francisco, CA, USA - passed - Title: "Recent developments in ANNs" Contact: spie@nessie.wwu.edu

**IEEE Int’l Conf, on Software & Programming Issues for Connectionist Smaller Computers, 19-20 April 1993, Berkeley, CA, USA - passed - Title: "Neural networks structures; and architectures." Contact: bee@wics.berkeley.edu (Joachim Beer)

**SPIE Science of Artificial Neural Networks IV, 16-23 April 1993, Orlando, USA - passed - Title: "Real-world applications and recent theoretical developments applicable to current applications." Contact: spie@nestie.wwu.edu

**IEEE Int’l Conf, on Citations in Artificial Intelligence, 1-2 May 1993, San Francisco, CA, USA - passed - Title: "Recent developments in ANNs." Contact: spie@nessie.wwu.edu

**IEEE Int’l Conf, on Artificial Neural Networks, 10-12 June 1993, Paris, France - passed - Title: "Neural network methods." Contact: J.-P. Berrut, ENSCP, UEDU (Professor W.P. Ljung)

**CBMS ’93: 6th IEEE Symposium on Computer Arithmetic, 13-15 June 1993, Austin, TX, USA - passed - Title: "Computer Arithmetic and Neural Networks." Contact: Prof. K. Hira, Dept Instrument & Control Engg., Engineering, Hosting University, Université du Maine, 72031, France, Tel: +44 944 95445, 044 954 7912 (Japan) Tel/Fax 81 44 33 12 12

**IEEE Int’l Conf on Fuzzy and Intelligent Technologies, 6-10 June 1993, Munich, Germany - passed - Title: "Principles from neurobiology; Physical & mathematical theories; Cognitive connections; Robotics; Applications" Contact: icann@hb.dmu.west.de

**IEEE Int’l Conf on Artificial Neural Networks (ICANN’93), 13-16 Sept 1993, Amsterdam, Netherlands - passed - Title: "Recent developments in neurobiology with advanced engineering and technological applications." Contact: WC’93, Dept. Computer Science, Solvay University, P.O.Box 1142, Seoul, 100-611 Korea, email: kwo@kog.net

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**IEEE Int’l Conf, on Neural Networks, 28-30 Apr 1993, San Francisco, CA, USA - passed - Title: "Recent developments in ANNs" Contact: spie@nessie.wwu.edu

**IEEE Int’l Conf, on Software & Programming Issues for Connectionist Smaller Computers, 19-20 April 1993, Berkeley, CA, USA - passed - Title: "Neural networks structures; and architectures." Contact: bee@wics.berkeley.edu (Joachim Beer)

**SPIE Science of Artificial Neural Networks IV, 16-23 April 1993, Orlando, USA - passed - Title: "Real-world applications and recent theoretical developments applicable to current applications." Contact: spie@nestie.wwu.edu

**IEEE Int’l Conf, on Citations in Artificial Intelligence, 1-2 May 1993, San Francisco, CA, USA - passed - Title: "Recent developments in ANNs." Contact: spie@nessie.wwu.edu

**IEEE Int’l Conf, on Artificial Neural Networks, 10-12 June 1993, Paris, France - passed - Title: "Neural network methods." Contact: J.-P. Berrut, ENSCP, UEDU (Professor W.P. Ljung)

**CBMS ’93: 6th IEEE Symposium on Computer Arithmetic, 13-15 June 1993, Austin, TX, USA - passed - Title: "Computer Arithmetic and Neural Networks." Contact: Prof. K. Hira, Dept Instrument & Control Engg., Engineering, Hosting University, Université du Maine, 72031, France, Tel: +44 944 95445, 044 954 7912 (Japan) Tel/Fax 81 44 33 12 12

**IEEE Int’l Conf, on Neural Networks, 28-30 Apr 1993, San Francisco, CA, USA - passed - Title: "Recent developments in ANNs." Contact: spie@nessie.wwu.edu

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works to Control Problems.” Contact: nh@voss.fhg.de (F.R. Voss)
• Grammatical Inference: Theory, Applications and Alternatives 22-24 April 1993, CICS, UK 28 Feb 93 “Machine Learning, Pattern Recognition, Neural Networks” Contact: siuk@uk.ac.essex (Simon Lucas)
• Workshop on Integration Technology for Real-Time Intelligent Control Systems (RTICTS’93) 5-7 Oct 93 Madrid, Spain 28 Feb 93 “Integrating Expert Systems, Neuronal Networks, Fuzzy Logic.” Contact: CEIDDEZ@ic.ac.unam.es (Enrica Chozza)
• Workshop on Fundamental Issues in Biological and Machine Learning 30 May- 4 Jun 93 Jerusalem, Israel 1 Mar 93 “theoretical, experimental and practical aspects of learning in natural and artificial systems” Contact: learn@galaxy.huji.ac.il (Shimon Ullman)
• NATO Advanced Studies Institute on Statistics and Neural Networks 21 Jun-2 Jul 93 Les Arcs, France 1 Mar 93 “Topics range from theoretical modeling and adaptive computational methods to empirical comparisons between statistical and neural network techniques.” Contact: cherkans@eu.unimaak (Profesor Vladimir Cherkauskas)
• 2nd Turkish Symposium on Artificial Intelligence and Artificial Neural Networks 24-25 Jun Istanbul, Turkey 1 Mar 93 Contact: ygs@brubon.bitnet (Dr. L. Akin)
• 8th IEEE Int’l Symposium on Intelligent Control August 25-27, 1993, Chicago, IL, March 1993 Contact: Kevin M. Passino, ISIC’93 Dept. Electrical Engineering The Ohio State University 2015 Neil Ave. Columbus, Ohio 43210-1274 phone: (614) 292-5716 email: passino@eagle.eng.osu.edu (Kevin M. Passino, ISIC’93 Dept.)
• Simulating Societies ’93 24-26 Jul 93 Siena, Italy 15 Mar 93 “Approaches to simulating social phenomena and social processes” Contact: soci.surrey.ac.uk (Prof Nigel Gilbert)
• 1993 Int’l Conf. on Neural Networks and Signal Processing (ICNN93) 2-5 Nov 1993 Hong Kong Mar 15 93 Contact: Prof. Zhen-Ya He (Fax: +86 25 781-9243)
• 1993 Int’l Conf. on Application-Specific Array Processors (ASAP’93) 25-27 Oct 93 Verona, Italy 15 Mar 93 “Applications that Require Specialized Computing Systems: Neural Networks” Contact: dadda@unet2.elet.polimi.it (Prof. Luigi Dadda)
• IEEE/Nagoya University WWW on Multiple/Distributed Robotic Systems: Architecture and Control for Coordination and Cooperation Nagoya, Japan 30 Jul-31 Oct, 1993 March 1, 1993 Travel expenses for the authors of the best papers will be supported by WWW. Submissions: Send abstract to Prof Kazuhiro Kogure, General Chair, WWW on MDRS, Dept. Mechatron-Information and Systems, Nagoya University, Furu-cho, Chikusa-ku, Nagoya 464-8601, Japan, Tel 81 52 781 5111, Ext. 873, FAX 81 52 782 9243.
• NATO Advanced Study Institute: New Advances and Trends in Speech Recognition and Coding 28 Jun-10 Jul 93 Boston, Spain 1 Apr 93 “Neural Networks for Speech Recognition and Coding” Contact: ASILhal ugrzn (Antonio Rubio-Ayuno)
• 5th IEEE Int’l Conf. on Tools with Artificial Intelligence 8-11 Nov 93 Boston, MA, USA 15 Apr 93 “Artificial neural networks” Contact: mca.cs.toronto.ca (John Mylopoulos)
• 1993 Computer Architectures For Machine Perception (CAMP’93) Workshop, December 15-17, 1993, New Orleans, Louisiana, USA, 16 Apr 93 Contact: Dr. Larry Davis, UMIAIC, A. V. Williams Building, Univ. of Maryland, College Park, MD 20742, USA or Johanna Weinstein by e-mail: camp93@umiaic.umd.edu.
• Annual Conf. of Japanese Neural Network Society 5-13 Jul 93 Izuka, Japan 18 Apr 93 “Neuroscience, Cognitive Science, Models & algorithms, Hardware, Applications” Contact: yasu@ces.kyutech.ac.jp (Prof. Shozo Yami)
• IJCNN ’93: Int’l Joint Conf. on Neural Networks 25-29 Oct 93 Nagoya, Japan 30 Apr 93 Contact: unal@at.ac (Shiraz Ural); Sec- retariat, TPI Inc., Dai-san shirakawa Bld.6F, 4-8-10 Meiseki, Nakamura, Nagoya 450, Japan, Tel 81 52 561 9880 0655 Fax 81 52 561 1241
• The First New Zealand Int’l Two- stream Conf. on Artificial Neural Networks and Expert Systems (ANNES’93) 24-26 Nov 93 Dan­ don, New Zealand 80 Apr 93 Contact: gporteous@otago.ac.nz (Ms Gina Porteous)
• Int’l Conf. on Computer Systems and Applied Mathematics 19-23 Jul 93 St. Petersburg, Russia 1 May 93 “Neural nets” Contact: sergej@fpac.lgu.spu.spb.ru (Sergey S. Voitsekh)
• 1st Simulation Technology Conf. 93 (Incorporating WNN93, a Neural Networks conference) 7-10 Nov 93 Clear Lake, TX, USA 1 May 93 “Parallel and Distributed Processing, Fuzzy Logic, Neural Networks” Contact: mpagdient@eng.auburn.edu
• RO-MAN 93: 2nd IEEE Int’l Workshop on Robot and Human Communication 3-5 September ’93. Tokyo 15 May 93 Contact: Fumio Hara, Dept Mechanical Eng., Science Univ. Tokyo, 1-3 Kagurazaka, Shinshu-ku, Tokyo 162, Japan. 81-3-3260-4271 x 3559, Fax 81 3- 3266-0394, mfn@pea20..bitnet (F.Hara)
• Conf. on Computational Learning Theory (EURO-COLT ’93) 20-22 Dec 93 London, U.K. 15 May 93 “Learning algorithms and the theory of machine learning, including artificial and biological neural networks.” Contact: john.shawe-taylor@ucl.ac.uk (John Shawe-Taylor)
• EP’94 3rd Annual Conf. on Evolutionary Programming, 24-25 Feb­ ruary, 1994. San Diego, CA, USA 30, 1993 Contact Lawrence J. Fogel ORIN­ CON Corp., 1936 Towne Centre Dr, Sandiego CA 92121
• ICNN’93, IEEE/Nagoya University WWW on Learning and Adaptive Systems 22-3 October, 1993. Nagoya, Japan, 1 July, 93 Contact: Fumihito Arai and Toshio Fukuda, Dept. Mechatron-Information and Systems, Nagoya Univ., Furo-cho, Chikusa-ku, Nagoya 464-01, Japan, 81-52-781-5111, ext#73 Fax 81 52 781 9247
• 12th Int’l Conferences on Pattern Recognition (ICPR) 10-13 Oct 97 Jerusalem, Israel 1 Feb 94 “Pattern Recognition and Neural Networks” Contact: (S. Ullman) shimon@wisdom.weizmann.ac.il
• Special Issue of Machine Vision and Applications on Neural Networks for Machine Vision July 31, 1993. Contact: Swar K. Sethi, Dept. of Computer Science, Wayne State University, Detroit MI 48202.FAX 313- 577-6865. swar@cs.wayne.edu

February/March 1993
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June 29 - July 1, 1994 Orlando, Florida
as part of the
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• Evolutionary algorithms for computational intelligence
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• Comparisons between different variants of evolutionary algorithms
• Machine learning applications
• Evolutionary computation for neural networks
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Lin-Shan Lee, National Taiwan University. Evaluation: Communications Society. Citation: Contributions to computer voice input/output techniques for Mandarin Chinese and to engineering education.

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Thomas A. Seliga, University of Washington. Evaluation: Geoscience and Remote Sensing Society. Citation: For pioneering work in radar polarimetry applied to meteorology and for contribution to engineering education and research.

Mansoor Shafi, Telecom Corporation of New Zealand. Evaluation: Communications Society. Citation: Contribution to the propagation modeling of microwave radio paths and for leadership in the deployment of digital radio.