Newsletter of the IEEE Neural Networks Council

CoNNections

VOLUME 2 NUMBER 2 May 1992

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UPCOMING EVENTS

June 7-11	**IJCNN Baltimore**
October 7-10	**IEEE/RNNS Rostov on Don, Russia**
November 3-6	**IJCNN Bejing**
January 1993	***IEEE Transactions on Fuzzy Systems*** **Inaugural Issue (See Call for Papers inside)**

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Control Systems Society
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CALL FOR PAPERS

SECOND IEEE INTERNATIONAL CONFERENCE ON FUZZY SYSTEMS

SAN FRANCISCO, CALIFORNIA
MARCH 28 - APRIL 1, 1993

General Chair: Enrique H. Ruspini
Program Chair: Piero P. Bonissone

DEADLINE: SEPTEMBER 21,1992

Deadline for receipt of papers is September 21, 1992.

Six copies of the paper must be submitted, in English, eight pages maximum including figures.

Please include title, authors name(s), and affiliation(s) on top of page followed by an abstract.

FAX submissions are not acceptable.

Please send submissions prior to the deadline to:

Dr. Piero Bonissone
General Electric CR&D
Bldg. K-1, Rm. 5C32A
1 River Road
Schenectady, New York 12301

FUZZ IEEE 1993

IEEE

Papers for publication are solicited on basic concepts of fuzzy systems, tools for their development, qualitative and approximate modeling, fuzzy control, fuzzy signal processing, fuzzy knowledge-based systems, and other applications of fuzzy-set theory and fuzzy logic to science and engineering.

This conference will be held in conjunction with the 1993 IEEE International Conference on Neural Networks.

For general information contact:
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5665 Oberlin Drive, Suite 110
San Diego, CA 92121

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IEEE NEURAL NETWORKS COUNCIL

CALL FOR PAPERS

TWO MAJOR CONFERENCES

1993 IEEE INTERNATIONAL CONFERENCE ON NEURAL NETWORKS

SAN FRANCISCO, CALIFORNIA
MARCH 28 - APRIL 1, 1993

General Chair: Enrique H. Ruspini
Program Cochairs: Hamid Berenji, Elie Sanchez, Shiro Usui

ICNN 1993

IEEE

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Six copies of the paper must be submitted, in English, eight pages maximum, including figures.

Please include title, authors name(s), and affiliation(s) on top of page followed by an abstract.

FAX submissions are not acceptable.

Please send submissions prior to the deadline to:

Dr. Hamid Berenji
AI Research Branch
MS 269-2
NASA Ames Research Center
Moffett Field, California 94035

Papers for publication are solicited on basic concepts and applications of neurobiological systems, neural networks, and neural computers. Sessions on evolutionary programming, genetic algorithms, and virtual-reality applications are planned.

This conference will be held in conjunction with the Second IEEE International Conference on Fuzzy Systems.

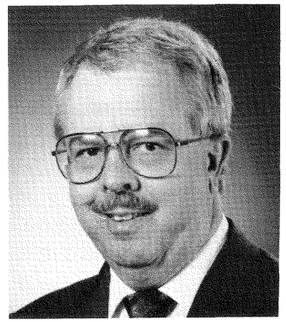
For general information contact:
Meeting Management
5665 Oberlin Drive, Suite 110
San Diego, CA 92121

Tel. (619) 453-6222
FAX (619) 535-3880

IEEE NEURAL NETWORKS COUNCIL

PRESIDENT'S MESSAGE: *INNS and IEEE: an end to an era*

Russell C. Eberhart
Research Triangle Institute
IEEE Neural Networks Council President



Many of you have undoubtedly heard about the disagreements between the IEEE Neural Networks Council (NNC) and the International Neural Network Society (INNS). The two organizations have been co-sponsoring the International Joint Conferences on Neural Networks (IJCNNs) for the past few years. The Baltimore IJCNN will be the last IJCNN to be held under this agreement.

I assure you that both the Chinese Neural Networks Council and the IEEE NNC are irrevocably dedicated to making the November 1992 Beijing neural networks conference an immense success. Over 400 papers have already been accepted from within China. Contributions from outside China continue to pour in. We hope you are able to participate in this important and exciting meeting. Please note that the deadline for submission of papers has been extended until May 31, 1992, and that a call for papers appears in this issue of CoNNections.

Starting in 1993, the IEEE conference will be called, as it was in 1987 and 1988, the IEEE International Conference on Neural Networks (ICNN). The first of the rejuvenated ICNNs will be held in San Francisco in conjunction with FUZZ-IEEE '93, in late March. A call for papers for these combined meetings is elsewhere in this newsletter.

What prompted the IEEE NNC to cancel the agreement with the INNS? There have been many rumors circulating as to the reason. In order not to fuel the fire, the NNC, until now, has chosen not to respond to public correspondence generated by the INNS on this matter. We remain friends and colleagues with the INNS volunteers. Many IEEE members are INNS members and visa versa.

The point has been reached, however, where some of these issues need to be aired. After reading this column, I hope you better understand the difficulties that the Council has encountered in dealing with the INNS and the reason we have chosen to no longer work with them under a "blanket" agreement. I also hope that this is the last time that this issue needs to be addressed in *CoNNections*.

At its recent meeting in San Diego, the NNC Administrative Committee (AdCom), consisting of a quorum of four elected officers and two representatives from each of the twelve IEEE member Societies of the NNC (a list of Societies appears on the front page of this newsletter) felt it necessary to terminate the NNC agreement with the INNS concerning IJCNNs. A motion to support the letter reproduced at the end of this President's Message was passed unanimously. Indeed, approval was by acclamation. The vote was based on the cumulative history of the NNC's difficulty in working with INNS.

NNC volunteers, for example, have found it extremely difficult, if not impossible, to communicate with their INNS volunteer counterparts. Following are a few of the more recent incidents:

First, because of his position as a manager of Federal neural network research funding, the INNS President has declared a conflict of interest with members of the IEEE AdCom. Consequently, the Presidents of the IEEE NNC and INNS cannot communicate directly. When communication breaks down, conflict often results.

The INNS currently communicates with the NNC primarily through the INNS Executive Director and INNS General Counsel. Both are salaried employees of the INNS and trained as lawyers.

The INNS Executive Director apparently also guides policy for the INNS. Last year, NNC volunteers were informed by the INNS Executive Director that they were prohibited from interaction with INNS volunteers. The reason given was that litigation was allegedly threatened by the NNC on an INNS volunteer. The NNC has NEVER considered suing anyone and has never even referred any of the matters to IEEE legal staff! The NNC considered the INNS Executive Director's edict against interaction among our fellow neural network colleagues unacceptable, and chose to ignore it.

More recently, INNS issued a written threat of litigation against the IEEE Neural Networks Council, myself personally, all other agents of the IEEE, the Baltimore IJCNN conference management services, and all of the Baltimore IJCNN volunteers. Although the letter I sent to the INNS (reproduced below) clearly addresses the issue, reasons for this threat included concerns that the 'profit' from the conference would not be appropriately shared.

IEEE, anticipating the effect of such threats on the health of the professional community, indemnifies volunteers against lawsuits brought as a result of their IEEE activities. Such legal bullying can only damage the neural networks volunteer infrastructure. The IEEE NNC categorically refuses to work with any organization using such tactics.

Numerous aspects of the handling of the Beijing conference by the INNS also contributed to the NNC's decision to cancel future joint conferences. Conference arrangements were carried out by the INNS without the participation or knowledge of the Conference Chair. This resulted, despite input from the NNC, in the alienation of the local volunteer organization, and the selection of facilities too expensive to allow participation by our Chinese colleagues. When confronted, rather than comply with

Following is the letter sent to the INNS:

February 26, 1992

Dr. Paul Werbos
President International Neural Network Society
1250 24th Street, N.W.
Suite 600
Washington, D.C. 20037

Dear Dr. Werbos:

It is with regret that I must inform you that, as a result of deviations from agreed commitments by INNS, we consider the IEEE NNC/INNS Agreement terminated effective immediately.

The decision to terminate our agreement was made after extensive discussion of the issues involved within the IEEE Neural Networks Council leadership and consultation with Corporate IEEE.

Specifically, the current issue involves our joint conference that was planned for Beijing China with Professor Zong Sha as its Chairman. INNS failed to accept Professor Sha's authority by not providing him with an approved budget sufficiently in advance of the meeting and interfered with his local arrangements in violation of an agreement signed November 26, 1991 by Professor Zong Sha, Mr. Morgan Downey and Dr. Harold Szu.

Over the recent past, it has become increasingly difficult, if not impossible, for our volunteer leadership to communicate directly with their INNS volunteer counterparts to resolve such issues. We hope that conditions will change and that our organizations will again be able to actively work together for the benefit of our profession.

In accordance with IEEE's commitment to abide by the Agreement while it was in force, and in accordance with the previous budget approval process, any surplus from the Baltimore conference to be held in 1992 will be divided evenly between the IEEE Neural Networks Council and the INNS.

Very truly yours,

Russell C. Eberhart

cc: I. Engelson
E. Herz
J. Powers

Deadline for August *CoNNections* JULY 15

Send articles, letters, announcements and enquiries regarding advertising to

Rosalyn Snyder
Managing Editor
5630 Lakeside Drive
Pfafftown NC 27040
919 922 1633
roz@relito.medeng.wfu.edu

local wishes, the INNS polled its Board of Directors to receive authorization to move the meeting outside China. The NNC finds these actions to be strongly objectionable.

Despite these developments, the Beijing IJCNN will be held in November of 1992 as originally scheduled. An agreement has been crafted by the Chinese Neural Networks Council (CNNC), under the leadership of General Conference Chair Prof. Sha Zong, that defines the roles of the various participants in the meeting. The IEEE NNC has concurred with this agreement. The INNS Program Co-Chair for the Beijing IJCNN supports it, and it is hoped that the INNS Board of Directors will ratify it soon. The conference will be administered, as is IEEE tradition, by local volunteers. The IEEE Beijing Section is a co-sponsor.

IJCNN Proceedings on CD-ROM!

The IEEE Neural Networks Council is working closely with the IEEE Circuits and Systems Society and the IEEE Engineering in Medicine and Biology Society to bring conference proceedings to CD-ROM. Plans are to give free CD-ROM Proceedings of the Baltimore IJCNN to all IEEE member registrants. This is in addition to the hard copy proceedings that will be given to all conference registrants. The project is being underwritten totally by the IEEE Neural Networks Council.

The CD-ROM project for the two Societies and the Council is being coordinated by the IEEE's CREP (Conference Record - Electronic Proceedings) committee chaired by Dr. Mani Soma at the University of Washington, Seattle. The committee was formed last year by the three IEEE groups for the express purpose of pioneering use of CD-ROM's to archive conference proceedings. Many believe that CD-ROM conference records will be the standard in the near future.

The Council's liaison to CREP is Stamatios Kartalopoulos, AT&T Bell Laboratories, who also serves as the Chair of the Council's Publications Committee.

The main change is that there is no longer any FINANCIAL arrangement or cooperation between the IEEE NNC and the INNS; rather, each organization interacts independently with the CNNC. The primary effect is that each organization will accept registrations independent of the other. You can thus register via either organization regardless of your membership affiliation(s). The foregoing remarks regarding registration assume that the INNS does choose to participate, which I sincerely hope is the case.

If you have any questions about the Beijing conference, or the Council's relationship with the INNS, please do not hesitate to contact me. I hope that the disagreements between the INNS and the IEEE NNC will soon be put behind us, and that additional columns of this type are not necessary. It will be best for the field, and allow us in the IEEE Neural Networks Council to serve our members better.

I hope to see you in Baltimore and in Beijing!

--RCE 4-11-92

Conference Report: IEEE FUZZ-IEEE, 1992

Towards a synthesis of fuzzy logic and neural networks

James C. Bezdek
University of West Florida
General Chair

The First IEEE International Conference on Fuzzy Systems (FUZZ-IEEE '92)was held in San Diego on March 8-12, 1992. The conference was sponsored by the IEEE Neural Networks Council (NNC), the first organ of the IEEE which has shown a concentrated interest in fuzzy systems since their inception in 1965. Thus, it seems appropriate at this point to first thank the NNC (in particular, Russ Eberhart, Bob Marks, Pat Simpson, and Mike Roth) for their interest, enthusiasm and support for the conference.

The conference was commissioned in January, 1991, and was put together in a very short timeframe. Although there were a few glitches due to this, everything ran smoothly, due in no small part to the able and diligent work of the program co-chairs, Profs. Didier Dubois and Henri Prade of the Universite Paul Sabatier. Local arrangements were handled by the local section of the IEEE, managed by Jim Bussert; his gang contributed greatly to the pleasant atmosphere at the conference.

Why an IEEE conference on fuzzy systems? And more particularly, why done under the aegis of the NNC? Here are some compelling answers.

There has been, in the last five years, a large and energetic upswing in research efforts aimed at synthesizing fuzzy logic with computational neural networks (CNNs). There are several reasons for this.

First, the enormous success of commercial applications which are at least partially dependent on fuzzy technologies fielded (in the main) by Japanese companies has led to a surge of curiosity about the utility of fuzzy logic for scientific and engineering applications.

Second, the marriage of fuzzy logic with CNN's has a sound technical basis, because these two approaches generally attack the design of "intelligent" systems from quite different angles. CNN's are essentially low level, computational algorithms that (sometimes) offer good performance in dealing with sensor data used in pattern recognition and control.

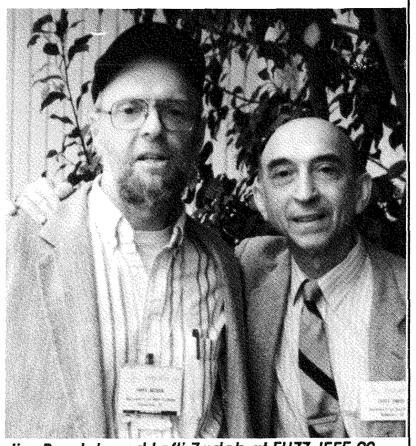
On the other hand, fuzzy logic was introduced in 1965 by Lotfi Zadeh as a means for representing, manipulating and utilizing data and information that possess non-statistical uncertainty. Thus, fuzzy methods often deal with issues such as reasoning on a higher (semantic or linguistic) level than CNNs.

Consequently, the two technologies often complement each other, CNNs supplying the brute force necessary to accommodate and interpret large amounts of sensor data; and fuzzy logic providing a structural framework that utilizes and exploits these low level results.

Third, there seem to be many ways to use either technology as a "tool" within the framework of a model based on the other. For example, the CNN is well known for its ability to represent functions. The basis of every fuzzy model is the membership function. So, a natural application of CNNs in fuzzy models is to provide good approximations to the membership functions that are essential to the success of any fuzzy approach.

Broadly speaking, then, we may characterize efforts at merging these two technologies as (i) fuzzification of conventional CNN architectures and models; and (ii) the use of CNNs as tools in fuzzy models. A large portion of the work described at FUZZ-IEEE '92 addressed one or more of these issues.

While the final tallies are not yet available, some preliminary data is. There were just over 500 registrants at FUZZ-IEEE '92, which is about 150 more than the largest conferences (the International Fuzzy Systems Association (IFSA) meetings) devoted to fuzzy systems have ever had in attendance prior to this meeting. A majority of attendees



Jim Bezdek and Lotfi Zadeh at FUZZ-IEEE 92

were affiliated with American industry, as opposed to the more usual representation of academics that are found at fuzzy sets meetings. This speaks well for the timing of the IEEE, which represents, in the main, engineering systems design and developers.

It was clear from the exhibits that hardware, software, and related technologies based on fuzzy logic are maturing rapidly. This conference is most certainly an harbinger of much larger meetings on this topic in the near future. Indeed, next year's conference (FUZZ-IEEE '93) will be held in San Francisco March 28-April 1, 1993, and will be the IEEE's first attempt at holding two major international conferences collocated in both time and space, because the 1993 IEEE International Conference on Neural Networks (ICNN) will be held simultaneously with FUZZ-IEEE '93.

There were a number of other activities associated with this meeting that were a direct result of NNC sponsorship. For example, 19 full and brief papers that were presented at the conference will be published in a special issue of the *IEEE Transactions on Neural Networks* entitled "Fuzzy Logic and Neural Networks in Pattern Recognition and Control"

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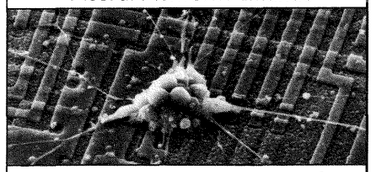
–Neural Network Almanac



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FUZZ-IEEE '92 *(cont.)*

which will appear in September, 1992. All of these papers were orally presented at the conference in San Diego, but by explicit design and arrangement, none of them were published in the proceedings, even in abbreviated form (the program of the conference gave the forthcoming special issue as a reference for these talks). Every paper in this issue thus had the benefit of full and complete refereeing.

In view of recent developments in the commercial arena, the IEEE in general and the NNC in particular should be congratulated on their vision for recognizing the timeliness of a special issue that contained papers on fuzzy sets methods, CNN methods, and the integration of the two.

A second activity arising from and tied to these events concerns a new flagship journal sponsored by the NNC, namely, the *IEEE Transactions on Fuzzy Systems*, which is scheduled to begin in January, 1993. The NNC felt that a special issue of TNN devoted to synthesis of fuzzy logic and CNNs would be a useful way to introduce readers of TNN to some of the many currents of cross fertilization between the two fields that are presently afoot. Indeed, this issue of TNN will reach readers just a few months before the inauguration of the *IEEE Transactions on Fuzzy Systems*.

Another activity coordinated with FUZZ-IEEE was NNC sponsorship of an IEEE Press milestone papers book entitled Fuzzy *Models for Pattern Recognition*, edited by J.C. Bezdek and S. K.. Pal. This book collects 51 key papers that trace the evolution of fuzzy pattern recognition from Zadeh's original paper to the present. The last chapter concerns itself with the integration of fuzzy logic with computational neural networks, a topic much in evidence at FUZZ-IEEE '92. This book was released for sale at FUZZ-IEEE '92.

All in all, the conference and activities associated with it have been hectic, exciting and rewarding. I think I can speak for the entire fuzzy community in saying that we welcome further opportunities to interact with the NNC and its constituents.

--JCB 4-11-92

Standards Committee Report

Walter J. Karplus, UCLA
Mary Lou Padgett, Auburn Univ

The IEEE Neural Networks Council Standards Committee has been very active this year and requests your participation at IJCNN Baltimore. Two provisional working groups on Glossary and Symbols, and Performance Evaluation Methodology have received support from DoD personnel. The Paradigms provisional working group is actively seeking people to help with coding. A Software and Hardware Interfaces group is being considered.

Please save some time at IJCNN Baltimore to meet with the groups of your choice, listen and make written comments. The meetings will probably be held Tuesday evening, but check the bulletin board for final day, time and place. See you in Baltimore!

To join the groups, contact Standards Committee chair, Walter Karplus; vice chair, Mary Lou Padgett; or any of the group chairs.

•Glossary and Symbols
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Auburn University
1165 Owens Rd.
Auburn, AL 36830
P: (205) 821-2472 or3488
F: (205) 844-1809
mpadgett@eng.auburn.edu

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Updates

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Dear Sirs:

If the weather is chaotic and the weather affects history then history is chaotic... and if biology is chaotic then evolution is chaotic and oh my, my, my... does that mean it's impossible to get a grip on yourself?

Russ Eberhart's Daemon Overheard Whispering In His Ear 3/6/92

(from the RIGS newsletter, Copyright 1992 Rick Alan)

In Memoriam
Isaac Asimov
1920-1992

ANNOUNCEMENT AND CALL FOR PAPERS

IEEE TRANSACTIONS ON FUZZY SYSTEMS

The Neural Networks Council, which is composed of twelve member Societies of the IEEE, is pleased to announce the sponsorship and establishment of a new archival publication on fuzzy sets and system design. The journal will be called the ***IEEE Transactions on Fuzzy Systems***, and has been defined as having the following scope:

SCOPE OF THE *IEEE TRANSACTIONS ON FUZZY SYSTEMS*

The *IEEE Transactions on Fuzzy Systems* will publish highest quality archival technical papers in the theory, design and application of fuzzy systems. Readers are encouraged to submit papers which disclose significant technical knowledge, exploratory developments and applications of fuzzy systems. Emphasis will be given to engineering systems and scientific applications. The *TFS* will also contain brief papers and letters which describe and report information of current interest; and comments and rebuttals submitted in connection with published papers.

Representative applications areas include the following aspects of fuzzy systems:

1. Estimation, prediction and control
2. Approximate reasoning
3. Intelligent systems design
4. Machine learning
5. Image processing and machine vision
6. Pattern recognition
7. Computational neural networks
8. Electronic and photonic implementation
9. Medical computing applications
10. Robotics and Motion Control
11. Constraint Propagation and Optimization
12. Civil, Chemical and Industrial Engineering Applications

The first issue of the ***IEEE Transactions on Fuzzy Systems*** will be sent free of charge to all subscribers of its sister publication, the ***IEEE Transactions on Neural Networks.*** Authors are encouraged to submit five (5) copies of prospective contributions in the standard format of IEEE transactions, together with an IEEE copyright release, to the editor at the following address:

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Pensacola, Florida
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INFORMATION ACCESS: What's Available and Where to Get It

Wesley R. Elsberry
Research Scientist, Battelle Pacific Northwest Laboratories

The shock of recognition! In an electronic information environment, minority groups can no longer be contained -- ignored. Too many people know too much about each other. Our new environment compels commitment and participation. We have become irrevocably involved with, and responsible for, each other.

-- Marshall McLuhan, Quentin Fiore *The Medium is the Message*

Interconnectivity is not an exclusive property of neurons and their processing element analogues. Technical advances rely increasingly upon good communications and the availability of data. *"Let me get it off the net," "I'll ftp it to you,"* and, *"What's your E-mail address?"* are heard more and more frequently at conferences and in the workplace.

Along the way to the global village of McLuhan, however, there are plenty of lost travelers. I will attempt to point out possible pathways to the things that people both on the net (Usenet, Internet, FidoNet, etc.) and off have desired: easily accessible simulations, tutorials, source code, and text concerning artificial neural networks, genetic algorithms, and other related technologies.

While many have affiliations that provide sites that offer Internet access, the majority of people interested in ANNs still do not. What possibilities are there for those not on Internet?

Let's examine this in a little more detail. Several broad categories of people fall into the non-Internet bin. Those programmers and engineers who are not students and not employed by companies that have taken the Internet plunge are, in a sense, distanced from the global village mentioned earlier. Students at universities whose computing departments are lagging a decade or more behind the curve or whose computing administration keeps paranoia foremost in developing policy are similarly distanced. Students at high schools (yes, there are high school students attempting to learn about and program ANNs) will rarely have Internet access. Finally, interested lay people (the sort who code up programs described in *Scientific American*'s "Mathematical Recreations" column for fun) will rarely have access to Internet. These people should not be entirely left out of the ongoing process of information dissemination, and, fortunately, alternative communications channels do exist.

While not offering all the capabilities of Internet sites, users of Usenet and FidoNet nodes can find significant ANN resources.

For the remainder of this column, I will describe ***FidoNet*** resources. FidoNet is an ad hoc collection of nodes which communicate with each other via modem. The FidoNet is named after Tom Jennings' *Fido BBS* software, which included the capability for Fido BBS sites to interchange mail. The concept spread pretty quickly, and now there are over 8,000 FidoNet nodes around the world. (There are many nodes which are FidoNet mail compatible that are not included in that figure.)

A FidoNet node is typically an IBM PC compatible computer with mailer and BBS software, and a modem. Most nodes have 2400 bps modems, but a large minority have higher-speed 9600 bps modems. The proprietary HST protocol from US Robotics is still prevalent among the high-speed modem equipped nodes.

FidoNetEchos

FidoNet nodes allow users to participate in EchoMail discussions. A FidoNet Echo is a special interest discussion area, similar in concept to Usenet newsgroups. Echo messages entered by users at local boards are packed up and shipped upwards in the FidoNet hierarchy in the middle of the night, and are thence distributed down again to other nodes receiving EchoMail. This distribution scheme is aimed to minimize costs, which gives the trade-off that a message may take a week to wend its way around to the far side of the world.

FidoNet nodes rarely attempt to get a complete Echo feed of all topics. Instead, lists of subscribed-to Echoes are kept in the hierarchy so that the amount of data transferred around nodes is kept to a minimum.

Echo topic areas cover the range, ironically, from 12_STEPS (discussing the various addiction/compulsion groups premised on the philosophy of Alcoholics Anonymous) to ZYMURGY (discussing home-brewing of beer and wine), with about 600 other discussion areas in between. The Echo areas which are likely to be of interest to us are NEURAL_NET, AI, and ROBOTIX. These three Echoes have international distribution. If one wishes to see these Echoes upon a FidoNet node locally, one can make arrangements with an agreeable local sysop to add these Echoes to those already carried.

Certain FidoNet nodes have an emphasis upon AI and ANN technologies. I know of three worth special attention from those searching for ANN resources: ***ShadeTree BBS, the Interocitor BBS***, and ***Central Neural System BBS.***

• ***ShadeTree BBS***
System Operator (Sysop)
Bill Keller
417 Peebles Street
Pittsburgh, PA 15221
Contact number (at up to 2400 bps)
(412) 244-9416
FidoNet node 1:129/124.

Bill Keller works for NeuralWare, Inc. ShadeTree's hours of operation are 8:30 PM to 8:30 AM Eastern time, seven days per week.

Keller dedicates his system to beginners in AI topics. He offers the three Echo areas already mentioned plus specialized discussion areas for sub-topics such as "Management Action Expert Systems" and a "Brainmaker Neural Net Discussion Area." Keller also publishes a newsletter which is aimed at the beginning AI and ANN enthusiast. ShadeTree has a good collection of programs for the IBM PC available for download in quite a diverse range of AI areas of interest, and is a cooperating AI Expert magazine listings distribution board. There are several general ANN simulation environments for the PC and some for other machines, and many of the AI Expert ANN demonstration programs are available here.

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FidoNet node 1:124/2206.

Steve Rainwater moderates the International AI Echo. The Interocitor's hours of operation are 24 hours a day, seven days per week, and it carries the `AI`, `NEURAL_NET`, and `ROBOTIX` Echoes. Rainwater keeps a list of AI events in the log-on screen.

An interesting feature of the Interocitor is the version of Eliza hooked to the Page Sysop function. The Interocitor has the largest selection of general files of the three boards described here, with many technical areas covered. Of special interest, according to Rainwater, is the natural language processing area, which is being added to by a local expert in linguistics.

There is a large selection of AI files, including many expert system shells, LISP and Scheme interpreters, and demonstration programs. The Interocitor has most of the AI Expert listings going back to 1986. The ANN files include many general simulation environments, and some interesting text files. A large collection of back issues of Neuron Digest are available on-line.

The comp.ai.neural-nets newsgroup, among others, is gated in from Usenet, and is available for the user.

•***Central Neural System BBS***
P.O. Box 1187
Richland, WA 99352
welsberr@sandbox.kenn.wa.us
Contact number (up to 9600 bps, HST)
(509) 627-6267
FidoNet node 1:347/303.

I am the sysop of CNS, and I moderate the NEURAL_NET Echo. The hours of operation for CNS are 24 hours a day, seven days per week. CNS carries the NEURAL_NET, AI, and ROBOTIX Echoes.

While CNS has the smallest offering of files in total, it has the largest collection of ANN-related files of the three boards mentioned. The usual simulators for the PC and other machines are available, but there are several additional files to note. A file containing ANN resources, including books, journals, mailing lists, FTP sites, magazines, newsletters, and cooperative projects is maintained here. The name changes with the version, but is always `RESRC???.TXT`, where the question marks indicate the version number. An application database has been started, and is open for additions. A listing of files containing source code is maintained as `SRC_CODE.LST`.

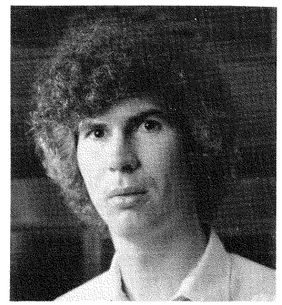
New files are described in `NEWSTUFF.CNS`, and the file listings of the ShadeTree and Interocitor are available as 01290124.ZIP and 01242206.ZIP, respectively. Recent Neuron Digest issues are available here. A collection of "calls for [papers | proposals]" is available as `CFP.LZH`. Various announcements for jobs or seminars are filed with extensions of `.ANC`.

All three of the sysops welcome submissions of information to add to the nodes. I have listed addresses for written correspondence. Note that it is usually possible to address email to persons on FidoNet boards from Internet by using the following format:

```
firstname.lastname
@f<nodenumber>
.n<netnumber>
.z<zonenumber>
.fidonet.org
```

So, to send a note to Bill Keller at FidoNet 1:129/124, one would address it as
bill.keller@f124.n129.z1.fidonet.org

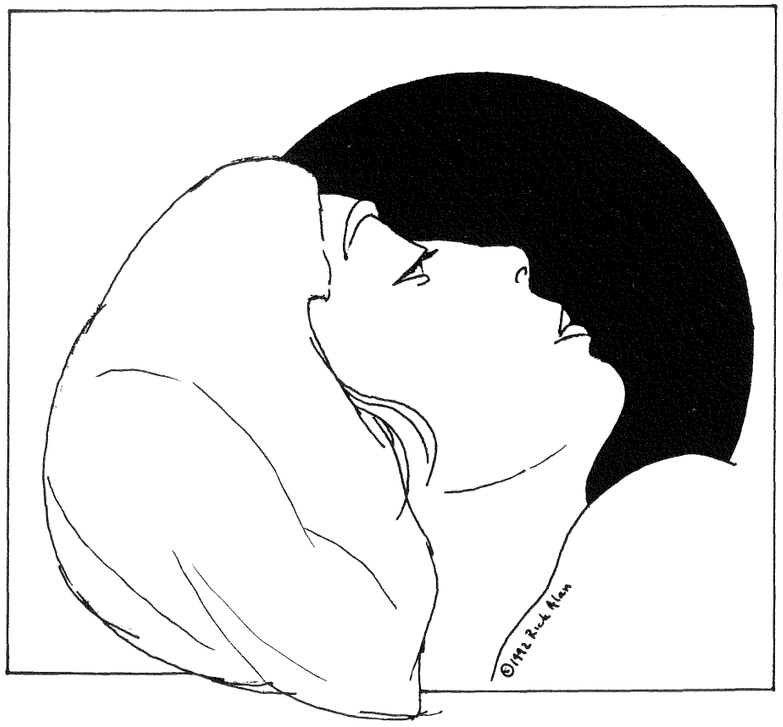
Going back to McLuhan for a moment, let me endorse his view that we must take responsibility for one another in this, the rise of the information age. We must attempt to communicate information which is needed by others. In many cases, this may be information about how to find information. That is the goal I am striving for in this column. I hope you'll join me in helping others find and utilize information about the fascinating science of artificial neural network modelling. Next time, I will delve into ANN resources available via FTP on the Internet.



Wesley Elsberry

AMI, ami & A Me

Rick Alan, TRW Safety Systems
IEEE NNC RIGS Committee Chairman



Everyone has a vision; what's yours?

The NNC RIGS Committee is establishing *Regional Interest Groups* (RIGS) around the world to promote neural networks, fuzzy logic, genetic algorithms, virtual reality, chaos (*heh! heh!*), biomolecular computing, fractals and other Advanced Machine Intelligence (AMI) technologies. We hope to make it a kind of international AMI festival culminating each year in the ICNN. Friends across the water and that sort of thing....

The mission of the RIGS is to have fun, explore AMI, build useful things and encourage/inspire the young toward science and engineering. Perhaps your vision could help.

You're "a me", right?

If you would like a free copy of the NNC RIGS Newsletter (AMI ami Review), please drop a note to
Rick Alan
TRW Safety Systems
4051 North Higley Road
Mesa, AZ 85205
(602) 396-1268,
e-mail: 70324.1625@compuserve.com.

It's a little unusual....

The following are excerpts from the RIGS Newsletter. It's a ***lot*** *unusual. Rick would like to hear news both serious and fanciful from other groups.*

Neural Nets & Fun, Fun, Fun...

Come to Arizona; the water's fine!

The IEEE Neural Nets Group 1 (TIG) is promoting speakers on neural networks, fuzzy logic, genetic algorithms, chaos, fractals, biomolecular computing and virtual reality, in short any Advanced Machine Intelligence ("AMI", our term!) technology.

We see the role of these new ideas in the society at large as one of raising the stature of science and engineering in general and AMI in particular. We hope to help do this by promoting the unique technical virtuosity and drama in our field. AMI technology is fun! We want to tell the world.

Our membership includes management and staff from Fortune 100 companies, professors, accountants and M.D.'s. Their common denominator is a desire to have fun in the group, explore AMI, be useful by actually building stuff and try to interest/inspire the young in science and engineering.

We would like to suggest this general role as applicable to the neural networks technical community overall.

There are lots of lakes and even snow in Arizona. Perhaps it's not as dry a State as it seems.

Group 1 Events

•April 16. Djuro Koruga on Buckyballs for Bioelectronic Interfacing.

•May 16, 1992. The Group 1 Fuzztival '92. Arizona State University. Lotfi Zadeh, the inventor of Fuzzy Logic will lead off followed by Enrique Ruspini of SRI International. Then Pat Simpson and Michael O'Hagen of Orincon will discuss their applications including one currently running on U.S. naval vessels. The Fuzztival is being kindly sponsored by Intel, Motorola, TRW and the ASU Center for System Science. A splendid time is guaranteed for all. How about our field?

WAR HOLES: Pizza Pi

Prettiful neurons fire away
Fractal attractors on holiday
Paradigms plenty
    in the cortex know
The things I see
    and the dreams I grow.

But if there is chaos in the brain;
If all of sanity is a bit insane
Then where in the world
    do falleth I --
A piece of pizza,
    or a piece of Pi?

(RIGS newsletter, Copyright 1992 Rick Alan)

Calls for Papers

•***30th Annual Allerton Conference on Communications Control and Computing.*** September 30-October 2, 1992. University of Illinois, Champaign-Urbana. Submissions: Abstracts for short and long papers must be submitted by July 13, 1992. Contact: Paul Van Dooren and Mark Spong Allerton Conference, University of Illinois at Urbana-Champaign, Coordinated Science Laboratory, 1101 West Springfield Avenue, Urbana, Illinois 61801

•***WNN92/Houston.*** November 4-6, 1992. Held in conjunction with SimTec92, near NASA/JSC, ***Sponsor:*** SCS; Co-sponsor NASA/JSC; Participating: IEEE-NNC; Co-operating SPIE and INNS. Paper contest. All neural network applications are of interest. ***Contact:*** Mary Lou Padgett, Auburn University, 1165 Owens Rd., Auburn, AL 36830. Phone: (205) 821-2472 or 3488. FAX (205) 844-1809. Email: mpadgett@eng.auburn.edu.

•***Industrial Applications of Fuzzy Control and Intelligent Systems*** December 2 - 4, 1992, College Station, Texas sponsored by Center for Fuzzy Logic and Intelligent Systems Research , Texas A&M University in cooperation with North American Fuzzy Information Processing Society (NAFIPS). Submissions: 4 copies of an extended abstract (2-4 pages) no later than May 15, 1992 to one of the Program Co-Chairs: John Yen, Dept. of Computer Science, Texas A&M University, College Station, TX 77843-3112, Tel: (409) 845-5466 Fax: (409) 847-8578 E-mail: yen@cs.tamu.edu or Reza Langari, Dept. of Mechanical Engineering. Texas A&M University College Station, TX 77843-3123 Tel: (409)845-6918 Fax: (409)845-3081 E-mail: R0L5525@zeus.tamu.edu

• ***31st IEEE Conference on Decision and Control,*** December 16-18, 1992, Westin LA Paloma Resort/Hotel, Tucson, AZ. ***Deadline:*** **March 1, 1992.** ***Contact:*** Professor T. Basar, Coordinated Science Lab, Univ. of Illinois, 1101 West Springfield Ave., Urbana, IL 61801, (217) 333-3607, (217) 244-1764 (FAX), email: tbasar@markov.csl.uiuc.edu

•***IEEE Winter Workshop on Nonlinear Digital Signal Processing.*** January 17-20, 1993. Tampere, Finland. ***Submissions***: 3 copies of a 2-page summary by October 1 to Petri Haavisto, Signal Processing Laboratory, Tampere University of Technology, P.O.B. 553, SF-33101 Tampere, Finland. Email: pjh@cs.tut.fi.
Fax: +358 31 161 857

•***IEEE International Workshop on Neuro-Fuzzy Control: Instrumentation and Control Applications.*** March 22-3 1993, Muroran, JAPAN. Submissions: 3 copies of complete manuscript before August 31, 1992 to Dr. Toshio Fukuda, Dept. of Mechanical Engineering, Furo-cho, Chikusa-ku, Nagoya 464-01, JAPAN, tel: 81-52-781-5111, ext 4478; fax: 81-52-781-9243 or
Dr. Yuzo Oshima, Electronics & Information System Div. Group, Nippon Steel, 31-1, Shinkawa, 2-chrome, Chuo-ku, Tokyo 104, Japan. Tel: 81-3-5566-2056; fax: 81-3-5566-2392.

•***APPS'93: Applications of Neural Networks to Power Systems.*** April 20-22 1993. Yokohama JAPAN. ***Submissions:*** 6 copies of 500-1000 word summary in English to Prof.

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Hiroyuki Mori, Dept. of Electrical Engineering, Meiji University, 1-1-1 Higashimita, Tama-ku, Kawasaki 214 JAPAN by ***August 10, 1992***

•***14th Int. Conf. on Application and Theory of Petri Nets*** June 91-25, 1993 Chicago. Submissions: 8 copies by Nov.mber 16, 1992 to Program Chair: Marco Ajmone-Marsan, Dipartimento di Elettronica, Politecnico di Torino, Corso Duca degli Abruzzi 24, I-10129 Torino Italy. Ph 39 11 5644032 Fax 312 413 0024 email: pn93@bert.eecs.uic.edu.

• ***World Conference on Neural Networks (WCNN-93)*** (formerly IJCNN-93) July 11-15, 1993 Portland, Oregon . *Sponsor:* INNS with co-operation of IEEE Neural Networks Council. Deadline for paper submission: January 15, 1993. ***Contact: George Lendaris, Science & Eng., Portland State University, P.O. Box 751, Portland, OR 97207-0751, 503 725 4988, 4960, lendaris@eecs.ee.pdx.edu***

•***ICNN'93-Nagoya Japan International Conference on Neural Networks- Nagoya.*** October 25-29, 1993. Organizers include Advisory Committee chair: Prof. Fumio Harashima. (Univ. of Tokyo), Organizing Committee chair Prof. Shunichi Amari (Univ. of Tokyo), Steering Committee chair: Prof. Toshio Fukuda (Nagoya Univ.), Program Committee chair: Prof. Kunihiko Fukushima (Osaka Univ.). Details will be announced in the forthcoming formal Call for Papers.

Calendar:

•***May 10-15, IEEE International Conference on Robotics and Automation.*** Nice, France. Sponsor: IEEE Robotics and Automation Society. *Contact*: Harry Hayman, P.O. Box 3216, Silver Spring, MD 20918 USA, Tel: (301) 236-5621.

•***May 21-23, 1992. Conference on Mathematical Aspects of Computer Vision*** University of Colorado at Colorado Springs, Colorado Springs, Colorado *Contact:* Robert Carlson or Keith Phillips, Department of Mathematics, University of Colorado at Colorado Springs, Colorado Springs, Colorado 80933-7150 Carlson@vision.uccs.edu or Keith@pyramid.uccs.edu.

•***May 18-22, 1992 ECCV2 European Conference on Computer Vision.*** Santa Margherita Ligure Italy. Contact: Prof. Giulio Sandini, DIST Univ. of Genova, via Opera Pia 11 A, 16145 Genova, FAX 39 10 603 801
e-mail eecv92@dist.unige.it.

•***May 20-22 IFAC Symposium on Intelligent Components and Instruments for Control Applications.*** Malaga, Spain. *Contact:* SICICA '92, Facultad de Informatica, Plaza El Ejido s/n, 29013 Malaga SPAIN. (Tel:) (34)52-131412; FAX: (34)52-264270. E-mail: sicica@octima.uma.es.

•***May 19-21. 19th Annual International Symposium on Computer Architecture.*** Queensland Australia. *Sponsors:* ACM/SIGARCH, IEEE Computer Society, IEEE. *Program Chair:* Allan Gottlieb, NYU Ultracomputer Laboratory, 715 Broadway, Tenth Floor, New York NY 10003 USA. email: gottlieb@nyu.edu.

•***June 6. COGANN: Workshop on Combinations of Genetic Algorithms and Neural Networks. Baltimore.*** In conjunction with ICJNN-92. *Contact:* Dr. Darrell Whitley, Department of Computer Science, Colorado State University, Fort Collins, CO 80524 USA. whitley@cs.colostate.edu.

•***June 14-17, 1992, The Fifth IEEE Symposium on Computer-Based Medical Systems*** *Sponsors*: Engineering in Medicine and Biology Society, The Computer Society, The Eastern North Carolina Section of the IEEE. *Contact:* Pete Santago, Department of Radiology, Medical Center Blvd. Winston-Salem, NC 27157-1022 phone:919-748-4260 , fax:919-748-2870, email:cbms@mrips.medeng.wfu.edu

• ***July1-2, '92. Intelligent Vehicles '91.*** Detroit. IEEE/IES Intelligent Vehicle Subcommittee. *Contact:* Ichiro Masaki, Computer Science Dept., General Motors Res. Labs., 30500 Warren MI 48090-9055. USA. FAX 313 986 9356. Ph. 313 985 1466.

•***July 7-10 IROS'92: IEEE/RJS*** Raleigh NC. *Sponsors*: IEEE IE and RA societies, Robotics Society of Japan and others. *Contact:* Ren C. Luo, ECE Dept., NCSU, Raleigh NC 27695-7911. Ph. 919-515-5193 ext 5199; fax 919-515-5523. email: luo@eceris.ece.ncsu.edu

•***August 4-7, 1992, International Conference on Control and Robotics.*** Vancouver, Canada. Sponsor: International Association of Science and Technology for Development. *Contact:* Prof. C.C.H. Ma, Dept. of Electrical Engineering, University of British Columbia, Vancouver, B.C., Canada. V6T-1Z4, Tel: 604-822-2045; Fax 604-822-5949.

•***August 11-13, 1992. IEEE International Symposium on Intelligent Control*** Glasgow, Scotland. U.K. ***Sponsor***: IEEE Control Systems Society. ***Contact:*** Thomas C. Hend-

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IJCNN'92 Beijing

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CALL FOR PAPERS

IEEE

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November 3-6, 1992

INNS

General Chair
Dr. Zong Sha
Chinese Institute of Electronics
Beijing, China

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The International Joint Conference on Neural Networks (IJCNN '92-Beijing) will be held November 3-6, 1992 (Tutorials on November 1-2), in Beijing, China. This conference is intended to provide a forum for dissemination of the latest scientific and technical information in the various fields of Neural Networks. All persons interested in the field of Neural Networks are invited to submit papers to this conference.

General Information:

For further details you may write or fax Dr. Russell C. Eberhart at the address given.

Registration:

Ms. Nomi Feldman
Meeting Management
5665 Oberlin Drive, Suite 110
San Diego, CA 92121 USA
Phone : (619)453-6222
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TOPICS OF INTEREST

Papers may be submitted for consideration as oral or poster presentations in the following areas:

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Biological Models
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Image Processing
Optical Neurocomputers
Self Organization
Sensorimotor Control Systems

Send Papers to:

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(Outside China)
Dr. Russell C. Eberhart, Director
Biomedical Engineering
Research Triangle Institute
PO Box 12194
Research Triangle Park NC 27709 USA
Phone: 919-541-7123, Fax: 919-541-8746
E-mail: rce@rti.rti.org

PAPERS MUST BE RECEIVED BY MAY 31, 1992.
All submissions will be acknowledged by mail, and accepted papers will be published as submitted.

All papers accepted for presentation will be published in full in the Conference Proceedings, which is expected to be available at the Conference for distribution to all regular Conference registrants. Oral presentations will be given from 8 a.m. to 12N and from 5p.m. to 9 p.m. Afternoons are devoted to poster sessions and exhibits.

Four (4) copies (one original and three copies) of the paper are required for submission. Do not fold or staple the original camera-ready copy. Only complete papers will be considered. Papers must be submitted camera-ready on 8 1/2" x 11" white paper with one inch margins on all four sides. They should be prepared by typewriter or letter-quality printer in one-column format, single-spaced, in Times or similar type style of 10 points or larger, and printed on one side of the page only. (This text is 10 point Times.) All text, figures, captions, and references must be clean, sharp, readable, and high contrast. FAX submissions are ***not*** acceptable. There will be a charge for papers exceeding six pages.

Centered at the top of the first page should be the complete title, author name(s), affiliation(s), and mailing address(s). This is followed by a blank space and then the abstract, up to 15 lines, followed by the text. In the accompanying letter, the following information must be included:

Full Title of the Paper
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Technical Session 1st and 2nd choices
Presentation Preferred- Oral or Poster
Presenter Name, Mailing Address Telephone and FAX Numbers
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INNS INTERNATIONAL NEURAL NETWORK SOCIETY

TUTORIALS will be offered on Sunday, June 7, 1992:

- NEURAL NETWORK APPLICATIONS FOR NEUROSCIENCE
  Richard Andersen, Massachusetts Institute of Technology
- COGNITIVE SCIENCE: SOFTWARE HINTS FOR NEURAL NETWORK HARDWARE
  James Anderson, Brown University
- ANALOG VLSI MODELS OF NEURAL COMPUTATION
  Andreas Andreou, Johns Hopkins University
- ROBOT MODELS OF BEHAVIORAL LEARNING
  Dana Ballard, University of Rochester
- ELECTRONIC NEURAL NETWORK IMPLEMENTATION
  Dan Hammerstrom, Adaptive Solutions, Inc.
- NEW LEARNING ALGORITHMS
  Michael Jordan, Massachusetts Institute of Technology
- NEURAL OSCILLATIONS: MODELS AND EXPERIMENTS
  Christof Koch, CalTech
- NEUROBIOLOGY OF MEMORY AND LEARNING
  Terrence Sejnowski, The Salk Institute
- NEURAL NETWORKS FOR SENSOR FUSION
  Patrick Simpson, Accurate Automation Corporation
- NEURAL NETWORK WAVELET TRANSFORMS
  Harold Szu, Naval Surface Warfare Center
- COMPUTATIONAL VISION
  Steven Zucker, McGill University

SPECIAL SESSIONS will be presented as follows:

- INDUSTRY PANEL: CHIP STATUS
  Ed Rosenfeld, Intelligence
- DEMONSTRATIONS
  Tom Schwartz, The Schwartz Associates
- GOVERNMENT PANEL
  Thomas McKenna, Office of Naval Research
- HOW CLOSE ARE WE TO SOLVING THE LEARNING PROBLEM AND HOW CAN WE DO BETTER?
  Andrew Penz, Texas Instruments
- MATHEMATICS AND NEURAL NETWORKS
  Rui deFigueiredo, University of California at Irvine
- NEUROCONTROL AND NEUROBIOLOGY WITH AEROSPACE APPLICATIONS
  Paul Werbos, National Science Foundation
- PANEL ON FINANCIAL APPLICATIONS OF NEURAL NETWORKS - Guido Deboeck, World Bank
- REAL WORLD ISSUES IN INSTALLING NEURAL NETWORKS- Ken Marko, Ford Motor Company

For Further Information Please Contact:

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San Diego, CA 92121
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First RNNS/IEEE Symposium on Neuroinformatics and Neurocomputing

RNNS

Rostov-on-Don, Russia

Oct 7 - Oct 10, 1992

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Technical Sessions

- **Natural Neural Systems Informatics**
- **Neurocomputer Perspectives**
- **Learning in Neural Networks**
- **Sensory Information Processing and Motor Control**
- **Neurocomputer Hardware**
- **Neural Information Theory and Coding**
- **Optimization Techniques**

Plenary Speakers

R. Hecht-Nielsen
M. Ito
A. Kalyaev
T. Kohonen

Symposium Schedule

Wednesday, October 7
Plenary Session: 10:00 am - 12:30 pm
Technical Session: 1:30 pm - 5:30 pm
Reception: 6:00 pm - 8:00 pm

Thursday, October 8
Technical Session: 8:30 am - 6:30 pm
Party: 7:00 pm - 10:00 pm

Friday, October 9
Fresh Air Session on a Tour Boat on the Don River: 9:00 am - 4:00 pm
Poster Session: 5:00 pm - 8:00 pm

Saturday, October 10
Plenary Session: 9:00 am - 1:00 pm

Accommodations

Most participants will be accommodated in hotels in central Rostov within walking distance of the Symposium centre.
Registration fee for participant includes admission to all sessions, and Proceedings.
Participants from the former USSR may pay fee and accommodations in Russian rubles. The fee amount will be announced at the beginning of the Symposium according to the current state of Russian currency.

Information

Requests for information should be addressed to either the **Symposium Chair**: Dr. Witali L. Dunin-Barkowsky, Director, A.B. Kogan Research Institute for Neurocybernetics
194/1 Stachka Ave.
344104 Rostov-on-Don, Russia
Telephone: (863 2) 280588
(863 2) 226836
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or the **Program Chair**:
Wesley E. Snyder, Ph.D., Professor
Department of Radiology
Bowman Gray School of Medicine
Medical Center Boulevard
Winston-Salem, NC 27157-1022
Telephone: (919) 748-3908
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Symposium Registration

1992 RNNS/IEEE Symposium on Neuroinformatics and Neurocomputing
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(This form may be duplicated for additional registrants.)

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Date: _____ Flight: _____
Departure (from Rostov)
Date: _____ Flight: _____
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Date: _____ Flight: _____

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- ***August 31 - September 2, 1992 2nd IEEE Workshop on Neural Networks for Signal Processing.*** Copenhagen, Denmark. *Sponsor:* The Computational Neural Network Center (CONNECT) and in cooperation with the IEEE Signal Processing Society. *Contact:* John Aasted Sorensen, Electronics Institute Bldg. 349, Technical University of Denmark, DK-2800 Lyngby, Denmark. email: jaas@dthei.ei.dth.dk

- ***August 30-Sept.3 IAPR: 11th International Conference on Pattern Recognition.*** The Hague, Netherlands. Sponsor: International Association for Pattern Recognition. Secretariat, Delft University of Technology, Department of Electrical Engineering, PO Box 5031, 2600 GA Delft, the Netherlands. Tel: 31 15 78 60 52; FAX: 31 15 62 20 00 email: ICPR@ET.TUDELFT.NL.

- ***September 17-19. IEEE International Conference on Systems Engineering*** International Conference Center, Kobe, Japan. sponsored by the Pascal Research Institute, Kobe and organized under the General Chairmanship of Professor Kotaro Hirano, Electronics Engineering Department, Kobe University, Japan. Contact: Professor B.A. Shenoi, Electrical Engineering Dept. Wright State University, Dayton, OH 45435.

- ***Sept.16-18, 1992 ICCT 92: International Conference on Communication Technology*** Beijing, China. *Sponsor*: Chinese Institute of Electronics (CTE) China Institute of Communication (CIC) and Tsinghua University. ***Contact***: Prof. Chongxi Feng, Dept. of Electronic Engineering, Tsinghua University, Beijing 100084, China. FAX: (861)2564176.

- ***September 15-18 1992. ICARCV92: The Second International Conference on Automation, Robotics and Computer Vision.*** Singapore, ***Sponsors***: Nanyang Technological University and the Institution of Engineers (Singapore), and in cooperation with the IEEE Computer Society, the IEEE SMC Society, IEEE Robotics and Automation Society (solicited), the IEEE Singapore Section, the Instrumentation and Control Society (ICS), Singapore Section and other local professional organizations. *Contact:* Professor T. Basar, Coordinated Science Lab, Univ. of Illinois, 1101 West Springfield Ave., Urbana, IL 61801, (217) 333-3607, (217) 244-1764 (FAX), email: tbasar@markov.csl.uiuc.edu.

- ***October 11-14 MILCOM '92: Communications: Fusing Command, Control and Intelligence.*** San Diego CA. *Sponsors*: IEEE Communications Society, and the Armed Forces Communication and Electronics Association. Contact: John Peckham, (619) 592-5153.

- **October 13-16, 1992, Visualization in Biomedical Computing.** Chapel Hill NC. **Sponsor:** Dept. of Computer Science, Univ. of North Carolina, Chapel Hill. **Contact:** Dr. Ricard A. Robb, Technical Program Chairman, Visualization in Biomedical Computing '92, Mayo Foundation, Rochester MN 55905, Tel: 507-284-4937; Fax: 507-284-1632; email: rar@bru.mayo.edu

- **November 3-6, 1992. ICIIPS'92 Beijing: International Conference on Intelligent Information Processing and Systems.** Sponsors: National Natural Science Foundation of China, IEEE Beijing Section, Chinese Institute of Electronics, Chinese Association of Automation. Submissions: 3 Copies of extended abstract by March 15 1992 to Mr. Shengfa Hu, Dept. of Automation, Tsinghua University, Beijing 100084, P.R. China. Tel: (86)2552451, ext 2877; Fax: (86)2568184

- ***November 23-5, 1992. ESORICS 92: European Symposium on Research in Computer Security.*** Toulouse France. ***Contact***: Jean-Jacques Quisquater, AFCET-Esorics-92, 156 boulevard Pereire, 75017, Paris FRANCE. email: deswarte@laas.fr.

- ***March 28-April 1, 1993. 2nd International Conference on Fuzzy Systems.*** San Francisco. *See Announcement.*

- ***May 10-12, 1993 IMACS Symposium on Signal Processing and Neural Networks SPANN'93*** , Montreal, Canada *Contact:* Prof. Z. Jacyno, Department of Physics, University of Quebec at Montreal, P.O.Box 8888, Station A, Montreal, P. Quebec, Canada, HC 3P8.

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