# 1988 Documents
# IEEE Neural Networks Council

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The IEEE Neural Networks Council became the IEEE Computational Intelligence Society

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# UNIVERSITY OF WASHINGTON
## SEATTLE, WASHINGTON

*Interactive Systems Design Laboratory*
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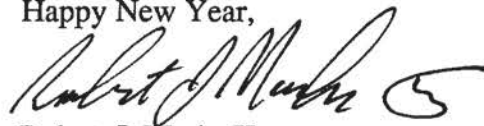*FAX: (206) 543-3842; marks@blake.acs.washington.edu*

December 27, 1988

Dear IEEE Neural Network Committee Members:

A number of items are attached:

PINK: The proposal you were sent under separate cover concerning the ICNN-INNS merger has been approved by majority vote of the NNC committee. A copy of my letter to Bernie Widrow, INNS Chair, is attached. Thanks to Nick DeClaris and his Negotiating Subcommittee for a fine and speedy job. This five-member committee will continue as the five members representing the NNC on the IJCNN Oversight Committee for IJCNN '89.

BLUE: Action items for our D.C. meeting with the NNC minutes from the NIPS conference are also attached. Note that the IEEE Engineering Management Society is petitioning for NNC membership.

GREEN: According to the NNC charter, member societies are to review proposed conference budgets two months prior to NNC voting. I have drafted a letter to member Society Presidents and have sent them the budget and conference plan. This is the green attachment. Please note that this document is IEEE proprietary.

YELLOW: The NNC Publications Subcommittee has drafted a letter to the member Society Presidents concerning an IEEE Neural Networks Transaction. A copy is attached in green. A more detailed proposal is being crafted and will be sent to you soon for your comments. Any comments to the Subcommittee members (see attachment) are most welcome.

Happy New Year,

Robert J. Marks II
NNC President pro tem

RJM:cc

Attachments

cc: Dr. Paul A. Willis, IEEE Engineering Management Society, President
Mike Aronstein, San Diego Section

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December 22, 1988

Prof. Bernard Widrow, Chair
International Neural Network Society
Department of Electrical Engineering
Stanford University
Stanford, CA 94305

Dear Bernie:

I am delighted to inform you that the proposal for the merger of the INNS and ICNN conferences has been approved by a majority vote of the IEEE Neural Networks Committee (NNC). Inherent in this agreement is the understanding that the Charter of the NNC and all guidelines of IEEE concerning such activities be adhered to. A copy of our Charter is attached.

We in the NNC look forward to a long, fruitful and mutually beneficial relationship with the INNS.

Best regards,

Robert J. Marks II
NNC Chairman pro tem

RJM:cc

Attachment

cc: NNC Members

Charter of the IEEE Neural Networks Committee (NNC)

Agreement Among the Participating Societies Regarding IEEE Activities in Neural Networks.

## SCOPE

The IEEE Neural Networks Committee is a committee of the IEEE Technical Activities Board consisting of IEEE Societies whose purpose is to coordinate technical activities in the interdisciplinary area of Neural Networks and provide the focus for cooperative efforts among TAB entities. The following Societies shall jointly sponsor the IEEE Neural Networks Committee, hereafter referred to as the Committee or NNC:

> Acoustics, Speech, and Signal Processing Society
>
> Circuits and Systems Society
>
> Communications Society
>
> Computer Society
>
> Control Systems Society
>
> Engineering in Medicine and Biology Society
>
> Industrial Electronics Society
>
> Information Theory Group
>
> Laser and Electro-Optics Society
>
> Systems, Man, and Cybernetics Society

The IEEE Neural Networks Committee shall act to foster activities in the area of Neural Networks by forming technical subcommittees, task forces, interest groups, and sponsoring technical workshops, symposia and international conferences. The NNC shall represent the IEEE Technical Activities Board in matters relating to Neural Networks.

## THE COMMITTEE

The membership of the NNC shall consist of two delegates from each of the sponsoring Societies. These delegates must be appointed by their respective Societies for two-year staggered terms, and may be reappointed. Each sponsoring organization shall have one equal vote on matters before the NNC.

The committee shall elect biennially a Chairman from among its current membership. The Chairman shall serve as focus for all communications and shall direct, on behalf of

the NNC, the operational matters of the committee. For the duration of the office of Chairman, that individual will not be considered to be a representative of his/her respective Society, therefore able to represent more freely the overall objectives of the NNC. The Chairman's Society will be represented by the other delegate only. On a biennial basis, the NNC shall also elect a Secretary and a Treasurer. In addition to the usual duties regarding minutes, reports, records, etc., the Secretary shall serve as Chairman pro tem in the absence of the Chairman. When the election to office of a Committee member requires an extension of the member's term of appointment by the sponsoring Society, it is expected that such an extension will take place. This extension will be for either one or two years as necessary, to maintain the staggered appointment with the other delegate.

## IMPLEMENTATION

This agreement shall be acted upon by the President of each sponsoring Society on behalf of the respective Administrative Committee or Board of Governors. Should any choose not to participate in this agreement, it is understood that their allocated positions on the NNC AdCom and their participation in sponsoring or funding of its activities shall be voided. The letter will be a binding agreement upon the parties when approved by their respective administrative committees and approved by the appropriate IEEE board(s). The original of this letter and of signed letters of transmittal indicating sponsorship agreement from the respective IEEE Societies will become a part of TAB records.

Once the NNC has been established, other IEEE Societies can petition to become members of the Committee. Such Societies must demonstrate that they have been active in the area of Neural Networks in the last two years. A two thirds majority vote is required by the NNC for admission of new members.

A Society can indicate its intent to withdraw from the NNC at any time. However, the withdrawing Society shall continue to be financially responsible for its share of future NNC activities which have been approved by the NNC prior to the date of withdrawal. If a Society withdraws from the NNC, its share in future NNC activities is divided equally among the remaining members.

## FINANCIAL MATTERS

All member Societies share equally in the financial responsibilities of the NNC. Budgets requiring NNC approval shall be submitted to the sponsoring Societies at least sixty days in advance of the NNC vote, so that the sponsoring Societies can instruct their representatives accordingly. Budgets will be approved by majority vote of the committee.

The NNC shall be authorized to establish a reserve fund from which it can maintain its own operations. The fund shall be used to make cash advances to conferences sponsored by the NNC and to support the operating expenses of the Committee. The level of this reserve shall be 50% of the approved operating budget (including conference commitments) for the last year's operations. All monies above this level will be

distributed to the sponsoring Societies on an equal basis at the close of the IEEE fiscal year.

## AMENDMENTS

Changes in the procedures specified in this letter will be enacted by amendments to be approved by a two thirds majority of the sponsoring Societies.

Date _____          Agreed by

_____
(Name)

_____
(Office)

_____
(Society)

---

1. The Computer Society has apparently chosen not to participate in the NNC (12/21/88, Robert J. Marks II, NNC Chairman pro tem).

Action items for the NNC meeting at IJCNN '89 in Washington, D.C.

- NNC Membership for Engineering Management Society
- Election of next NNC Chair - Nominating Committee
- ICNN-INNS Merger Status
- NNC Publications Committee Report
- Financial Reports
- Future meeting status reports
- Other

## Minutes of the IEEE Neural Network Committee

Attendance. (Those marked * are NNC members or were appointed representative of their member societies by an absent NNC member. Only NNC members were eligible to vote on motions.)

| Member Society or other | Name | Phone | Computer Mail |
|---|---|---|---|
| IE | Fernando Aldana* (for Okabe) | 34-1-2343709 | |
| San Diego Section | Mike Aronstein | | |
| COM | Kesh Bakhru* | (619) 277-6780 X2648 | |
| SMC | Nick DeClaris* | (202) 357-7955 and/or (301) 328-7866 | cuellar%umbc.dec net@umbc2.umd. edu |
| EMBS ~~ICNN '89 Comm~~ | Russ Eberhart | (301) 953-5037 | |
| IT | A. Ephremides* (for Mustafa) | (301) 454-6871 | |
| LEO | K. M. Johnson* | (303) 492-1835 | |
| CAS | R. J. Marks* | (206) 543-6990 | marks@blake.acs. washington.edu |
| IE | H. T. Nagle* | (919) 737-3578 | |
| IT | E. C. Posner* | (818) 356-4852 | |
| R.A. | Wesley Snyder* | (919) 737-2336 | wes@ecelet.ncsu. edu |
| IEEE EAB ICNN '89 Tutorials | R. A. Stampfl | (201) 562-5483 | |
| INNS/ICNN Merger Comm | Al Stubberud | (714) 856-7092 | |

-- The meeting was called to order at 8 P.M. local time at the Sheraton Denver Tech Center on November 28, 1988 by Troy Nagle.

-- Al Stubberud reported on the results of his discussions with INNS concerning conference coordination. The following motion was made, seconded and, after some discussion, was passed:

> "The NNC chair will appoint a committee to further pursue dialog with INNS using conditions 1 through 9 (on attachment #1) as a basis of negotiation."

- Al Stubberud noted that the INNS Board of Directors had unanimously accepted these conditions.

- Nagle noted that any final agreement with INNS must be consistent with IEEE regulations.

- Nagle appointed the following INNS Negotiation Committee Members:

  * Fernando Aldana
  * Wesley E. Snyder
  * Nicholas DeClaris
  * Edward C. Posner
  * Kristina Johnson

-- Aronstein presented the preliminary financial status report on ICNN '88 shown in attachment #2. He noted that bills were still coming in.

-- Due to his recently being elected 1989 IEEE Vice President for Technical Activities, Troy Nagle is no longer eligible to be Chair of the NNC. Nagle appointed a three-member Chairman Nominating Committee:

- Ed Posner
- Anthony Ephremides
- H. Troy Nagle

The Committee will collect nominations from the NNC (including themselves). An election will be held at the next NNC meeting. The election will be conducted by Chairman Pro Tem, Bob Marks. (The NNC Secretary assumes this title if the Chair resigns.)

-- Wes Snyder reported on the status of ICNN '89. Some delays have resulted from the uncertainty of INNS participation. There is as of yet no proposed budget, although preliminary operating capital has been made available. Over 4,000 calls for paper requests were mailed in November.

-- Ed Posner reported that Richard Lippmann has organized the EAB satellite program on neural networks (to be broadcast September 27, 1989).

-- The following motion was made, seconded and passed unanimously:

> "The NNC authorizes expenditures of up to $4,000 of its funds to financially assist the IEEE Educational Activities Board in the video taping of the tutorials at ICNN '89."

-- A discussion of the possible establishment of a neural network speakers service was deferred.

-- A two-page proposal for an IEEE Neural Network journal, prepared by Herb Rauch, was presented to the NNC. (See attachment #3.) A committee was appointed by Nagle to investigate possible NNC sponsored publications. Nagel appointed the following NNC Publication Committee members:

- Bob Marks, Chair
- Bob Newcomb
- Evangelia Tzanakou
- Herb Rauch

-- The next NNC meeting was tentatively scheduled on Wednesday, June 21, 1989 at ICNN '89 in Washington, D.C.

-- The meeting was adjourned at 10:01 P.M. by Nagle.

Robert J. Marks II
NNC Secretary

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*FAX: (206) 543-3842; marks@blake.acs.washington.edu*

December 21, 1988

TO: IEEE Neural Network Committee (NNC) Member Society Presidents

In accordance with the NNC Charter, the attached budget and conference plan is submitted to you for the comments of your Society. The NNC has recently agreed to jointly sponsor conferences with the International Neural Networks Society (INNS). Since this merger was officially sanctioned by the NNC in late December, this budget submission to you is somewhat tardy. In good faith, the NNC will follow this budget proposal prior to its official adoption only when expenditures are required or timely.

Sincerely,

Robert J. Marks II
NNC Chairman pro tem

RJM:cc

Attachments

cc: NNC Members
    Dr. Paul A. Willis, IEEE Engineering Management Society President

# IEEE TECHNICAL ACTIVITIES
## IEEE CONFERENCE INFORMATION SCHEDULE

See reverse side for instructions on how to complete this form

### CONFERENCE

1. Full title of Conference ___International Joint Conference on Neural Networks___

2. Dates of Conference __June 18-22, 1989__

3. Location of Conference (full name and address) __ __ __Washington Sheraton, Washington DC__

4. Estimated Attendance __2000__          5. Exhibits ☒ Yes    ☐ No

6. Will there be a Conference publication? ☒ Yes   ☐ No   If yes, check one box below.
   ☒ Conference Record          ☐ Other (explain) _____

### IEEE ENTITY INVOLVEMENT

7. If IEEE entity involvement is either Sponsorship or Cosponsorship as defined on reverse side, enter below the names of all involved IEEE and non-IEEE entities and their percent of financial share.

   Entity __IEEE Neural Networks Committee__ % __40__
   Entity __IEEE Washington Section__ % __10__
   Entity __International Neural Networks Society__ % __50__
   Entity _____ % _____

8. If IEEE entity involvement is either Participating or Cooperating as defined on reverse side, enter below the names of all involved IEEE and non-IEEE entities and indicate the involvement of each.

|  | Type of Involvement | |
|---|---|---|
|  | Participating | Cooperating |
| Entity _____ | ☐ | ☐ |
| Entity _____ | ☐ | ☐ |
| Entity _____ | ☐ | ☐ |
| Entity _____ | ☐ | ☐ |

9. Has the Section within whose geographical boundaries the Conference is being held been notified? ☒ Yes ☐ No
   If yes, who was contacted? __Russell Eberhart__  __Washington__
   (Name)                    (Section)

10. Has IEEE Conference Insurance form been submitted?  ☒ Yes   ☐ No

### ADMINISTRATION

For the following Conference officers, enter first name, middle initial and last name, plus complete address and telephone number.

CONFERENCE CHAIRMAN __Wesley E. Snyder__          Tel. No. ( 919) __737-2336__
Address _____

INFORMATION CONTACT __Nomi Feldman__          Tel. No. (619 ) __453-6222__
Address __3770 Tansy Street San Diego CA 92121__

**COMMITTEE MEMBERS**
If available, please attach to this form a complete list of Conference Committee members, their titles, addresses and telephone numbers.

**SUBMITTED BY:**
Name _____ __Wesley Snyder__          Tel. No. ( 919) 737-2336
Address __Dept. of Electrical and Computer Engineering NCSU Raleigh, NC 27607__
Conference Position __Co-chair__

SIGNATURE _____          Date _____

Figure 3.3.1B  IEEE CONFERENCE INFORMATION SCHEDULE, form front

# IEEE TECHNICAL ACTIVITIES
## IEEE CONFERENCE SERVICES DEPARTMENT
## CONFERENCE PUBLICATION FORM

See reverse side for instructions on how to complete this form

**PLEASE NOTE:** THIS INFORMATION IS REQUIRED IN ORDER TO ESTABLISH A PAYMENT TO THE CONFERENCE FOR POST CONFERENCE PUBLICATION SALES.

Parts A and B should be completed by the Conference Chairman or designee and returned six (6) months prior to the conference to: IEEE CONFERENCE SERVICES, 345 E. 47th STREET, NEW YORK, NY 10017-2394.

### Part A — CONFERENCE PUBLICATION

1. Full title of Conference __International Joint Conference on Neural Networks__
2. Dates of Conference __June 18-21, 1989__
3. Location of Conference (full name and address)__Washington Sheraton, Washington DC__
4. Full name of publication as it will appear on title page __Proceedings of the 1989 International Joint Conference on Neural Networks__
5. Scheduled date of publication __May, 1989__ 6. Estimated shipping date to IEEE __June 1989__
7. Estimated pages __1200__ 8. Page size __8½ x 11__ 9. Volumes __2__
10. Copyright: IEEE __x__ Other _____ 11. If other, name and address of entity that owns copyright _____

### Part B — PRODUCT/PRINTING

1. Name and address of printer __To be determined__
2. (Area Code) Telephone No. _____ 3. Contact person _____
4. IEEE PAYMENT FOR CONFERENCE PUBLICATION SHOULD BE SENT TO:
Name: _____
_____
_____
5. Conference Chairman or Designee _____
Title _____
6. Address _____ (Area Code) Telephone No. _____
_____
7. Date _____ 8. Signature _____

### TO BE COMPLETED BY IEEE - DO NOT COMPLETE - INTERNAL USE ONLY

1. LC Cat. No. _____ 2. IEEE Cat. No. _____ ISSN _____
4. Actual Shipping Date _____ 5. Actual pages _____
6. Cost per copy _____ 7. Copies ordered _____ 8. Copies Rec'd _____
9. Total Cost _____
10. Bindery name and address _____
_____
11. (Area Code) Telephone No. _____ 12. Contact person _____

Keep a copy for your records

Figure 5.1.3B    CONFERENCE PUBLICATION FORM

# IEEE TECHNICAL ACTIVITIES
## SUMMARY FINANCIAL REPORT FOR IEEE SPONSORED OR COSPONSORED CONFERENCES

See reverse side for instructions on how to complete this form

### CONFERENCE

1. Full title of Conference __International Joint Conference on Neural Networks__

2. Dates of Conference __June 18-21, 1989__

3. Location of Conference (full name and address)__Washington Sheraton, Washington DC__

## TYPE OF REPORT / CURRENCY USED

4. Indicate type of report by checking one box:
   [X] Budget      [ ] Interim Report      [ ] Final Report

5. All income and expense figures below must be in U.S. Dollars. For Conferences held outside the U.S.A., indicate here the local currency (e.g., Swiss Francs) and the conversion rate used (local currency units per 1 U.S. Dollar) and date.

Local currency: _____ Conversion rate: _____ Date of conversion rate: _____

### INCOME

| | Budget | Interim Report | Final Report |
|---|---|---|---|
| 6. Registration Fees (see attached budget) | $ | $ | $ |
| 7. Conference Publication Sales | | | |
| 8. Exhibits | | | |
| 9. Social Functions | | | |
| 10. All Other Conference Receipts | | | |
| 11. Total Conference Income | | | |
| 12. Advance Loans | | | |
| 13. Total Receipts | $ | $ | $ |

### EXPENSE

| | Budget | Interim Report | Final Report |
|---|---|---|---|
| 14. Promotion | $ | $ | $ |
| 15. Conference Publications | | | |
| 16. Exhibits | | | |
| 17. Social Functions | | | |
| 18. Administration | | | |
| 19. All Other Conference Expenses | | | |
| 20. Total Conference Expense | | | |
| 21. Loan Repayments | | | |
| 22. Total Outlays | $ | $ | $ |

## SURPLUS / (LOSS)

23. Total Receipts (13) $ __684,378__

24. Total Outlays (22) $ __587,150__

25. Surplus (Loss) — (Item 23 less Item 24) $ __97,228__

## POST CONFERENCE DISTRIBUTION    Surplus (Loss) in Item 25 to be distributed as follows:

| Cosponsor Entity | % Share | $ Distributed |
|---|---|---|
| a. IEEE Neural Networks Committee | 40 | |
| b. IEEE Washington Section | 10 | |
| c. International Neural Network Society | 50 | |
| d. | | |
| Surplus (Loss) $ | | |

## CONFERENCE FINANCIAL INSTITUTION

Name of Bank __to be determined__

Address _____

Conference Account Title _____  Account No. _____

Have you requested IEEE Conference Insurance?   [ ] Yes   [ ] No

## SUBMITTED BY:

Name __Wesley E. Snyder__                        Tel. No. (919) __737-2336__

Address __Department of Electrical and Computer Engineering, NCSU Raleigh NC 27607__

Conference Position __Co-chair__

SIGNATURE _____
Date _____

## INCOME

| REGISTRATION FEES | Quantity | | Fee | Total |
|---|---|---|---|---|
| one day member | 26 | | $88.00 | $2288.00 |
| student member | 120 | | $50.00 | $6000.00 |
| student nonmember | 74 | | $75.00 | $5550.00 |
| one day nonmember | 35 | | $110.00 | $3850.00 |
| member early advance | 200 | | $152.00 | $30400.00 |
| nonmember early advance | 185 | | $190.00 | $35150.00 |
| member advance | 470 | | $192.00 | $90240.00 |
| Misc. | 0 | | 0 | $0.00 |
| nonmember advance | 190 | | $240.00 | $45600.00 |
| member at conf | 400 | | $224.00 | $89600.00 |
| nonmember at conf | 300 | | $280.00 | $84000.00 |
| freebees | 0 | | $0.00 | $0.00 |
| Total registrants | 2000 | Subtotal | | $392678.00 |

| CONFERENCE PUB SALES | | | | |
|---|---|---|---|---|
| To members | 200 | | $75.00 | $15000.00 |
| To nonmembers | 50 | | $150.00 | $7500.00 |
| To IEEE | 50 | | $40.00 | $2000.00 |
| Total copies | 250 | Subtotal | | $24500.00 |

| EXHIBITS | | | | |
|---|---|---|---|---|
| Booths | 50 | | $900.00 | $45000.00 |

| OTHER | | | | |
|---|---|---|---|---|
| Interest | | | | $900.00 |
| Page charges | | | | $1300.00 - |
| Advance from icnn88 | | | | $40000.00 |
| Subtotal | | | | $42200.00 |

| | | | TOTAL INCOME | $504378.00 |
|---|---|---|---|---|

## EXPENSES

| PROMOTION | | Budget |
|---|---|---|
| Printing/call for papers | | $1700.00 |
| Printing/advance program | | $24000.00 |
| Mics. | | $0.00 |
| Printing/final program | | $13000.00 |
| Mailing lists/labels | | $6400.00 |
| Postage and mailing | | $14000.00 |
| Other (Ads) | | $8000.00 |
| Attendee packet | | $12000.00 |
| | TOTAL | $79100.00 |

| CONFERENCE PUBLICATION | | |
|---|---|---|
| Conference record printing | | $70000.00 |
| Author kit printing | | $3000.00 |
| Shipping | | $0.00 |
| Other | | $8000.00 |
| | TOTAL | $81000.00 |

| EXHIBITS | $12000.00 |
|---|---|

SOCIAL FUNCTIONS
(see attachment 1)                                          $170000.00

ADMINISTRATION
Insurance and bonding                                           $500.00
                                                                $500.00
Security and guards                                            $4000.00
Projection equip                                              $8000.00
Management and secretariai                                   $16000.00
Office equipment                                              $1500.00
Printing forms. etc.                                          $5000.00
Posters, signs, etc.                                          $3000.00
Telephone. etc.                                               $3000.00
Seed money to 90 conf                                        $40000.00
Auditing                                                     $5000.00
Clerical and Finance                                          $3000.00
Local arrangements                                            $2000.00
                        TOTAL                                $91000.00

Committee Expenses
(See attachment 2)                                          $21550.00

              TOTAL EXPENSES    $454650.00

              TOTAL REVENUE     $504373.00

CONFERENCE PROFIT              $49728.00

3

ATTACHMENT 1
SOCIAL FUNCTIONS

| | |
|---|---|
| Reception | $40000.00 |
| Dinner | $90000.00 |
| Coffee breaks | $40000.00 |

TOTAL $170000.00

TUTORIALS

INCOME

| | | | |
|---|---|---|---|
| Registration | 1500 | 120 | $180000 |

EXPENSES

| | | | |
|---|---|---|---|
| Speaker fees | 13 | 6000 | $78000 |
| Fees for large classes | | | $20000 |
| Video taping(to EAB) | | | $4000 |
| Audio-visual | | | $2500 |
| Other (signs,etc) | | | $6000 |
| Printing | | | $10000 |
| Tutorial committee | | | $2000 |
| Refreshments | | | $10000 |
| TOTAL | | | $132500 |

ATTACHMENT 2
COMMITTEE EXPENSES

| | |
|---|---|
| Amari travel | $3600.00 |
| Eckmiiler travel | $2800.00 |
| Stubberud | $3600.00 |
| Snyder | $3600.00 |
| Hecht-Nielsen | $1500.00 |
| Glaser | $1150.00 |
| Hopfield | $1150.00 |
| Sejnowski | $1150.00 |
| Werbos | $200.00 |

TOTAL $18750.00

TUTORIALS PROFIT $47500

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# IEEE IJCNN-89

## CONFERENCE PLAN

### VERSION B
### 15 November 1988

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## CONTENTS

--------------------------------------------------------------

## 1. Overview

IJCNN-89 will be the world's premier conference on neurocomputing in 1989. *Neurocomputing* is the second fundamental information processing paradigm. It is a new alternative to the *programmed computing* paradigm that has dominated all automated information processing since the invention of the electronic digital computer in the 1940's. Neurocomputing is based upon highly parallel distributed computing structures called *neural networks* which become capable of carrying out useful information processing transformations by means of self-adjustment in response to *training* data.

Neurocomputing is based upon *transformations;* whereas programmed computing is based upon *algorithms*. This makes neurocomputing technically quite different from ordinary programmed computing. For example, two of the primary focuses of programmed computing are algorithms and software. In neurocomputing the corresponding areas are neural network architectures and neurosoftware. However, for all their differences, neurocomputing and programmed computing share a great many common technological elements. For example, neurocomputer hardware and embedded software are very similar to those found in programmed computers. *Neurocomputers* (processors that are especially suited for implementing neural networks) attach to standard host computers as coprocessors (using standard digital interfaces) and neural networks are called from host computer software as if they were subroutines or procedures. Thus, while neurocomputing has some new elements, it fits neatly into the existing computer industry infrastructure.

# IEEE PROPRIETARY - DO NOT DISTRIBUTE

At the present time neurocomputing is a comparatively weak technology. The known neural network architectures (approximately 50 types are known, of which about 14 are in common use) have only limited information processing capabilities and each has significant known limitations. Because of this, only a few practical information processing problems can be successfully addressed at the present time. Problems in certain areas of sensor processing, data analysis, control, and knowledge processing seem to be the most amenable to solution with current neurocomputing capabilities. Fortunately, some of the problems in this limited set are of interest to large numbers of engineers and have significant economic importance.

Notwithstanding its current limitations, interest in neurocomputing has grown explosively over the last two years. Unlike Artificial Intelligence, which has still not found a large end-use market, neurocomputing looks as if it will have a number of near term end-use applications. A recent survey by *Intelligence* newsletter found 157 companies in the United States seriously pursuing major neurocomputing-based products and applications. Many more are exploring the use of neurocomputing as a tool for solving some of their information processing problems. This activity does not stop at the U.S. border. Several companies in Japan and Europe are also exploring applications of neurocomputing, as are the military services of both the U.S. and the U.S.S.R. At least 20 companies dedicated to supplying neurocomputers and related products and services have been founded within the last 18 months. The first IEEE International Conference on Neural Networks (IEEE ICNN-87), which was held in San Diego in June of 1987, had a total attendance in excess of 1,600; which made it larger than IEEE ICASSP and several other important IEEE conferences. The second IEEE International Conference on Neural Networks (held in San Diego in July of 1988) also attracted upwards of 1,600 participants, despite a large competing conference held by the International Neural Network Society six weeks later in Boston, Mass., which had about 1,200 participants (and 500 students). As 1989 begins, activity in neurocomputing continues to grow.

IJCNN-89 is the third installment in a conference series devoted to the technology of neurocomputing in its academic, industrial, commercial, consumer, military, and biomedical engineering aspects. The series is sponsored by the IEEE Technical Activities Board Neural Network Committee (NNC), and the International Neural Network Society IEEE Technical Societies participate in the meeting via membership in the NNC. The following Societies are affiliated with NNC:

- Acoustics, Speech, and Signal Processing Society
- Circuits and Systems Society
- Communications Society
- Control Systems Society
- Engineering in Medicine and Biology Society
- Industrial Electronics Society
- Information Theory Society
- Lasers and Electro-Optics Society
- Robotics and Automation Society
- Systems, Man, and Cybernetics Society

Non-IEEE Technical Societies participate in the meeting via association with the NNC. Local IEEE Sections participate in the meeting as both local hosts of the meeting and as cosponsors.

IJCNN-89 will be held in Washington, D. C. on Monday, 19 June through Thursday,

# IEEE PROPRIETARY - DO NOT DISTRIBUTE

# IEEE PROPRIETARY - DO NOT DISTRIBUTE

22 June 1989. Tutorials will be held on Sunday, 18 June, 1989.    IJCNN-89
expected to attract over 2,000 attendees, which will make it one of IEEE's largest
conferences. The emphasis in this year's conference will be to fix the minor problems
identified with IEEE ICNN-88, to run a highly successful . IJCNN-89 ' (both technically
and financially), and to firmly establish the NNC as a long-term, stable, technical coalition
of IEEE Sections and Societies that can successfully organize and run future conferences in
the series in a consistent manner.

## 2. Conference Organization

IJCNN-89 is being organized by the following committees:

1. IJCNN-89 Steering Committee:

   - Allen R. Stubberud (Co-chair)
   - Wesley E. Snyder (Co-chair)
   - Robert Hecht-Nielsen (Program Chair)
   - Nomi Feldman (Conference Coordinator)

2. IJCNN-89 Conference Committee

   - Conference Chair (honorary position) Shun-Ichi Amari, University of Tokyo. JAPAN
   - International Chair (honorary position) Rolf Eckmiller, University of Dusseldorf, WEST GERMANY
   - Allen Stubberud, Co-Chair
   - Wesley Snyder, Co-Chair
   - Nicholas DeClaris, Finance
   - TBD Hospitality
   - Robert Hecht-Nielsen, Program
   - Herb Rauch, Publicity
   - Yuishe Okabe, International publicity
   - TBD Local Arrangements
   - Bill Porto, Exhibits
   - Paul Werbos, Tutorials
   - Russ Eberhart, Posters
   - Carol Bonomo, Publications

3. IJCNN-89 Program Committee

   - Robert Hecht-Nielsen, Chair

- Shunichi Amari, Tokyo University
- Rold Eckmiller, University of Dusseldorf
- Allen Stubberud, University of California, Irvine

4. Publications Committee

- Carol Bonomo, Chair
- Robert Newcomb

5. Publicity Committee

- Herb Rauch, Chair
- Yuishe Okabe
- Robert Marks
- Kristina Johnson

6. Finance Committee

- Nicholas DeClaris, Chair
- Mike Aronstein

7. Exhibits Committee

- Bill Porto, Chair
- TBD

8. Hospitality Committee

- TBD

9. Local Arrangements Committee

- TBD, Chair

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### 3. Technical Program (TENTATIVE)

NOTE: This Program is currently IEEE PROPRIETARY. Details can be released only with explicit permission of IEEE ICNN-89 Organizing Committee Chair Allen Stubberud and Technical Program Chair Robert Hecht-Nielsen. There must be no leakage of information while the current negotiations are still underway. The next version of this document shall contain a Technical Program that is approved for unlimited distribution.

NOTE: Functions/names marked with X mean that the named person has committed to participate in the indicated manner. All other names are tentative and may be changed if the initially selected person cannot participate.

The Conference Technical Program consists of Tutorials, Technical Sessions, Plenary Sessions, and a Reception. These are now described:

Tutorials (to be given at the Sheraton Washington on Sunday 18 June, 1989)

    Notes: • Each tutorial offering shall last two hours.
           • Each tutorial offering shall be limited to a maximum of 100 participants.
           • Tutorials will be offered once, twice, or three times, depending on demand.

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- Four two-hour tutorial time slots will be used to allow participants to arrange as many combinations as possible.

1. David Casasent        Pattern Recognition Review  - X
2. Leon Cooper           Adaptive Pattern Recognition  -PENDING
3. John Daugman          Vision  - X
4. Walter Freeman        Neurobiology Review  - X
5. Stephen Grossberg     Adaptive Sensory Processing - X
6. Morris Hirsch         Dynamical Systems Review - X
7. John Hopfield         Neural Networks and Molecular Computing- PENDING
8. Lawrence Jackel       VLSI Technology and Neural Network Chips - PENDING
9. Teuvo Kohonen         Self-Organizing Feature Maps  - X
10. Bart Kosko           Associative Memory  - X
11. Demetri Psaltis      Optical Neurocomputers- X
12. Peter Wallace        Starting a High-Tech Company - PENDING
13. Bernard Widrow       LMS Techniques in Neural Networks - X
14. Ron Williams         Reinforcement Learning - X

Technical Sessions (to be held Monday 19 June through Thursday 22  June, 1989)

(NOTE: Each Session lasts 4 hours; Session Chairs' names are listed)

## MONDAY

### Monday, June 19, 1989

Morning Session:
- Associative Memory          James Anderson  - X
                             Bart Kosko - X

- Image Analysis             David Casasent - X
                             John Daugman - X

Afternoon Session:
- Neural Network Architectures    Shun-Ichi Amari - X
  & Theory I                      Michael Arbib - PENDING

- Applications I             Lee Giles - PENDING

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Allen Stubberud - X

## Tuesday, June 20, 1989

**Morning Session:**
- Neural Network Architectures      Morris Hirsch - X
  & Theory II                       Christoph von der Malsburg - PENDING

- Embedding Field Theory            Stephen Grossberg - X
                                    Gail Carpenter - X
        (NOTE: INVITED PAPERS ONLY IN THIS SPECIAL SESSION)

**Afternoon Session:**
- Reinforcement Learning            Harry Klopf - X
                                    Ronald Williams - X

- Applications II                   Charles Elbaum - X
                                    Robert Hecht-Nielsen - X

## Wednesday, June 21, 1989

**Morning Session:**
- Electronic Neurocomputers         Dan Hammerstrom - X
                                    Larry Jackel - PENDING
                                    S. Y. Kung - PENDING

- Neurobiological Models            V. I. Kryukov - X
                                    Andres Pellionez - X

**Afternoon Session:**
- Optical Neurocomputers            Nabil Farhat - X
                                    Dana Anderson - X
                                    Bernard Soffer - X

- Supervised Learning Theory        Geoffrey Hinton - PENDING
                                    Bernard Widrow - X

## Thursday, June 22, 1989

**Morning Session:**
- Robotics and Control              Rolf Eckmiller - X
                                    Michael Kuperstein - X

- Vision                            Kunihiko Fukushima - X
                                    Christof Koch - X

**Afternoon Session:**

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- Optimization         Stuart Geman - PENDING
                             Scott Kirkpatrick - PENDING

- Self-Organization      Teuvo Kohonen - X
                             David Willshaw - PENDING

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Plenary Sessions and Reception (the evenings of Sunday 18 June, Monday 19 June, Tuesday 20 June, and Wednesday 21 June 1989)

### SUNDAY

Wine and Cheese Reception - (6pm - 8pm)
(with Automata-Synthesized Music by Teuvo Kohonen)

Industry Panel - (8pm - 10pm), TBD Moderator

### MONDAY

Plenary Session I (8pm - 10pm)

Shun-Ichi Amari
James Burke, Keynote

### TUESDAY

Plenary Session II (8pm - 10pm)

Terrence Sejnowski
Patricia Churchland

### WEDNESDAY

Poolside Party (6pm - 8pm)

Government Funding Panel - Paul Werbos, Moderator
(8pm --->)

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### 4. Conference Charter

IEEE ICNN-89 shall be governed by the provisions of the following Charter

I. General

- The official name of the 1989 Conference shall be:     IJCNN-89

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• The Conference shall be held at the Sheraton Washington in Washington, D. C., from Sunday 18 June 1989 through Thursday 22 June 1989 in accordance with the official technical program (Section 3 of this Conference Plan document), which is hereby incorporated as part of this Charter.

• The IJCNN-89 is sponsored by the IEEE TAB Neural Network Committee (NNC), the International Neural Network Society, and other IEEE Sections (these bodies are hereafter referred to as the *sponsoring entities*).

• The Section in which the Conference is held shall be offered the opportunity to cosponsor the ICNN. Should the Section decline to accept the offer, its percentage financial participation in the Conference shall revert to the other sponsoring Sections.

• The Conference Steering Committee shall appoint the General Chair of ICNN-90 and beyond. The General Chair shall nominate the Conference Committee, the Program Chair(s), and the other Conference Operating Committee Chairs. Appointment of all Conference Committee, Program Committee, and Conference Operating Committee Chairs and members is subject to majority vote approval by the Steering Committee. The Steering Committee shall serve the function of an Advisory Board reviewing and offering guidance on the operational aspects and technical content of the Conference.

• The staging of the IJCNN-89 shall be managed by Nomi Feldman of Meeting Management, Inc., San Diego (who managed IEEE ICNN-87 and ICNN-88).

• The official technical program of the conference shall be printed and distributed to registrants at the conference registration desk. The program shall list all of the scheduled tutorials, technical presentations, and plenary talks and shall give the name and affiliation of the speakers.

• The Conference record containing the technical papers corresponding to the talks scheduled for presentation at the conference (along with other papers accepted for publication in the record by the joint actions of the Technical Program Committee and the Conference Committee) shall be distributed to registrants at the conference registration desk. This conference record shall not carry any individual's name(s), but shall be listed strictly as the .                            conference record. All papers presented at the Conference and in its record must be reviewed to assure high technical standards.

## II. Registration and Logistics

• Conference registration will be $190 before 1 March 1989, $240 between 1 March 1989 and 31 May 1989, and $280 between 1 June and 18 June 1989. One-day registration will be available at the door for $110. Exhibit hall and poster session entrance shall be free to conference registrants; others will be admitted by exhibitor ticket or $10 cash. Full time students showing school picture ID cards verifying their full-time student status (or presenting a school picture ID card and a letter from their school to verify their full-time student status) will be admitted for $90 (for any duration). Student registration shall include the proceedings. IEEE Members shall receive a 20% discount on all prices except

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one-day registration, exhibit hall registration, student registration, and tutorials.

• Each paid registrant at the conference shall have their name, mailing address, telephone number(s), and electronic mail address(es) accurately recorded in the official conference attendance list. This list shall be owned, copyrighted, and controlled by the Steering Committee. This list must be controlled in accordance with IEEE rules and procedures, as directed by the Steering Committee.

• Each paid registrant shall have an official pin-on or clip-on Conference Badge prepared for them at the registration counter. This badge shall have a border that is color coded to indicate: the day of registration for one-day registration, full paid registrant status, or student registration status. The badge shall present the registrant's name, organizational affiliation, and city/state/country in large black letters on a white background.

## III. Technical and Plenary Sessions

• 16 technical sessions are planned for the Conference between Monday 17 June and Thursday 22 June. The official technical session schedule presented in Section 2 of this document is hereby adopted.

• Each of the 16 technical sessions of the conference shall be 4 hours long. A maximum of 10 papers and a minimum of 6 papers shall be presented in any one session. No individual talk in any session shall be shorter than 20 minutes. Each talk shall have a separate question and answer period of not less than 5 minutes appended to it.

• No individual will be able to present more than one talk in the technical sessions of the conference. Of all of the talks given in the technical sessions and all of the poster session papers, no individual will be listed as author or co-author of more than two. Likewise, of all of the papers presented in the conference record, no individual will be listed as author or co-author of more than two such papers.

• The Conference Chair(s), International Conference Chair(s),Plenary Session Speakers, shall have their round-trip transportation to the conference, lodging at the conference hotel, and per diem ($30 per day) paid for by the conference.

• The plenary session speakers shall be explicitly warned that they must refrain from making any insulting comments, discordant or derogatory remarks or innuendos about other members of the neurocomputing community during their talks.

## IV. Tutorials

• 14 tutorials shall be presented at the Conference on Sunday 18 June 1989. The schedule for tutorials in the official Conference Technical Program is hereby adopted.

• Each tutorial offering seat shall cost $100. Three seats shall be sold as a block for $275.

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• Each tutorial presentor shall be paid $3,500 plus $50 per person attending their tutorial offerings after the first 25, up to a maximum total of $6,000. A minimum of 25 people must register for a tutorial for it to be held.

• The IJCNN-89 Technical Program Committee Chair shall not be allowed to receive any personal compensation for giving tutorials. However, should he wish, he may donate the compensation that he would have otherwise received to any non-profit organizations of his choosing.

## V. Exhibits

### General:

The theme of this year's conference and its exhibits is the same as that of ICNN-88. It is devoted to the technology of neural computing in all its scientific, engineering, academic, commercial, private enterprise and government aspects. The conference will feature presentations and tutorials by the field's leading academic and industrial experts, and will report the latest advances and neurocomputing technology.

### Exhibit Classes:

Exhibit space will be offered in three classes: commercial (CO), academic-publisher (AP), science fair (SF). Booths for CO, AP and SF exhibits will be allocated from exhibit areas designated for these classes.

### Definitions:

1. *Commercial* exhibitors are those exhibitors who are engaged n the development or production of neural network related products with the sale of these products and profit as their chief aim.

2. *Academic* exhibitors are those from colleges and universities whose aim it is to demonstrate current research efforts related to neural networks.

3. The *publisher* exhibit category includes publishers of neural network related books, magazines and newsletters who through such media help disseminate the interest in neural network technology and related knowledge.

4. The *science fair* category includes exhibits by students and others interested in advancing neural network technology and who do not qualify to exhibit as commercial exhibitors.

### Prices and Discounts:

Prices and discounts for exhibit booths are as designated below. Discounts are provided to encourage early registration of exhibitors.

Terms: The schedule of booths fees in U. S. dollars is:

| Regular | Discount | Deposit |
|---------|----------|---------|

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| | | | |
|---|---|---|---|
| Commercial (full booth) | 950 | 800 | 200 |
| Academic-Publisher (full booth) | 550 | 400 | 100 |
| Science fair (half booth) | 200 | 150 | 50 |

The discounted fee is available on or before 1 April 1989. A deposit is required to hold each booth ordered before 1 May 1989. Full payment is required for each booth ordered by 1 June 1989.

Sales:

TBD

Special Invitation:

A special invitation will be offered to all who exhibited at the 1988 International Conference on Neural Networks. The conference will offer last year's exhibitors an exclusive opportunity to purchase exhibit space at the IEEE ICNN-89 before opening sales of space to other exhibitors. However, exhibitors must register before 1 March, 1989 to take advantage of this offer.

Reservations and Full Payment:

TBD

Exhibitor's Obligation:

All of the exhibitor's outstanding obligations to IEEE ICNN-89 must be paid before the exhibitor or any of his representatives will be allowed to exhibit. Request for booth cancellations will be considered in accordance with the contractual rules and regulations.

Cancellations:

TBD

Space Assignments:

TBD

Entry to Exhibit Area:

An exhibitor may request up to five (5) complimentary passes for exhibit staff personnel for each booth ordered. In addition, up to five (5) complimentary guest passes may be requested for each booth ordered. A fee of $10.00 will be paid by non-registrants of the conference for entry into the exhibit area.

Exhibit Hours:

TBD

Set-up of exhibits will take place on

TBD

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Dismantling of exhibits will take place on

TBD

## Poster Sessions:

An estimated 100 poster sessions will be held during the four day conference. The actual number of sessions, their selection, and scheduling will be determined by the conference program chairman.

## The Lounge:

TBD

## Publicity and Exhibitor Solicitation:

TBD

## Conference Records:

TBD

## Contractors:

A conference service contractor will be selected to handle shipping and storage of exhibits, drayage, set-up and dismantling of exhibits; supply carpeting, furniture and miscellaneous supplies to the conference; rent furniture displays and miscellaneous items to exhibitors; provide electrical equipment and services, and generally support the conference and exhibitors. Upon request, an exhibitor may obtain an exhibitor's supplies and services kit from the conference service contractor. This kit will contain information on the costs of services and supplies available from the contractor.

Exhibit security will be provided using hotel guards and guards supplied by the conference security contractor. It is anticipated that three contractor guards will be required to provide exhibit hall security during daytime operating hours. One guard will be required overnight.

Additional contracting shall be arranged as necessary.

## Exhibits Program:

An Exhibits Program will be published which will provide a description of all exhibits and announce all exhibitors at the conference. Descriptions will be approximately 50-75 words long. Copies of this program will be provided to the exhibitors in an "Exhibitor's Registration Package" to be distributed on registration on the day of the conference.

## Exhibitor Registration:

An exhibitor registration desk will be open on the days of the conference. The exhibitor and staff may check in, register and pick up registration materials at this time. Exhibitor materials include copies of the Exhibits Program, special instructions, and staff and guest passes. An exhibitor may also preregister to the conference if so desired.

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## Contingency Planning:

In the event that there is an overwhelming demand for booth space at the conference, and the conference is able to sell booths in excess of the 60 planned, the areas allocated for the lounge and poster session area shall be used for additional exhibit booths. The lounge and poster session areas shall be reduced in size to accommodate additional booths. Arrangements shall be made to accommodate serving refreshments and providing space for the poster sessions elsewhere at the conference.

## Fire and Safety:

The exhibit area will be designed in accordance with local city fire codes and a permit will be obtained.

## Additional Planning Information:

The conference's exhibit contract, rules and regulations package to be sent out to all prospective exhibitors contains additional procedural details that will form part of this plan.

## IV. Volunteers.

In order to promote and facilitate local community involvement in the conference the          Organizing Committee will solicit volunteer services from university students and other interested community members.

Volunteer services will include clerical and general help before and during the conference. The commitment of each volunteer will encompass:

• attending the volunteer meetings,

• pre-conference clerical work assignments, and

• one five-hour shift per day beginning Sunday, 18 June 1989, concluding on Thursday, 22 June 1989. Each conference day will be divided into three five-hour shifts: morning, afternoon, and evening. Shift assignments and scheduling will be made by the Hospitality Chair .

In exchange for satisfactory completion of these services, the IEEE ICNN volunteers will receive:

• complimentary registration to the IEEE International Conference on Neural Networks, and

• complimentary copy of the IJCNN-89     proceedings.

The Organizing Committee Chair will appoint a member of the Organizing Committee to assume responsibility for the volunteer effort. It will be that person's responsibility to ensure that all volunteers successfully complete their assignments in return for their complimentary registration and proceedings.

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# UNIVERSITY OF WASHINGTON
## SEATTLE, WASHINGTON

*Interactive Systems Design Laboratory*
*Department of Electrical Engineering, FT-10*
*Telephone: (206) 543-6990, 543-6061 or 543-2150*
*FAX: (206) 543-3842; marks@blake.acs.washington.edu*

December 20, 1988

TO:  IEEE Neural Network Committee Member Society Presidents

I am the Secretary of the IEEE Neural Network Committee (NNC) of which your Society is a member. At the November 28 meeting of the NNC in Denver, Troy Nagle announced his resignation as NNC Chairman because he was elected 1989 IEEE Vice President for Technical Activities, and he could not hold both offices. As NNC Secretary, I assumed the position of NNC Chairman pro tem.

At the NNC meeting in Denver, a proposal was made to have an IEEE Neural Network publication starting in 1990. Prior to his resignation, Troy Nagle appointed me as Chairman of the four person NNC Publication Subcommittee appointed to investigate this possibility in more detail. The NNC Publication Subcommittee has discovered that in order to have a new IEEE publication starting in 1990, we must make a formal proposal to the IEEE Publication Committee which should meet in early February 1989. The four members of the NNC Publication Subcommittee have begun to prepare the formal proposal at the same time we are asking for your inputs. Our intent is to call the proposed publication the IEEE Transactions on Neural Networks. A slightly edited version of the informal proposal made at the NNC Denver meeting is enclosed.

The purposes of this letter are to:

(1)  alert you to the plans for the 1990 publication

(2)  let you alert your society Board of Governors

(3)  solicit your comments

(4)  solicit your suggestions for Editors or Associate Editors

We intend to send to you a draft of the formal proposal early in January, based on the information we gather in the next several weeks.

Below are listed the names, addresses, and telephone numbers of the four members of the NNC Publications Subcommittee.

Society Presidents of the IEEE NNC
Page 2

Please call me directly or contact any member of the subcommittee if you have questions. Thanks for your support.

Sincerely,

Robert J. Marks II
Professor

RJM:cc

Enclosure

cc: NNC Members

Members of NNC Publications Subcommittee:

Robert J. Marks II, Chair
Electrical Engineering Department, FT-10
University of Washington
Seattle, WA 98195
(206) 543-6990
FAX: (206) 543-3842
Computer mail: marks@blake.acs.washington.edu

Robert W. Newcomb
Microsystems Laboratory
Electrical Engineering Department
University of Maryland
College Park, MD 20742
(301) 454-6869
FAX: (301) 454-1837
Computer mail: newcomb@eneevax.umd.edu

Evangelia Tzanakou
Biomedical Engineering
Rutgers University
P.O. Box 909
Piscataway, NJ 08854
(201) 932-2037
FAX: (201) 932-5313
Computer mail: ETZANAKO@elbereth.rutgers.edu

Herbert E. Rauch
Lockheed
Dept. 92-20, Building 254E
3215 Hanover Street
Palo Alto, CA 94304
(415) 424-2704
FAX: (415) 424-3333

! for **IEEE Transactions on Neural Networks**
(21 December 1988)

:ary  We propose publication of the subject Transactions on a
early in 1990.  The time line is (1) approval by the Neural
subsequent approval in the next few months by constituent
:ne preparation of detailed editorial plans (including Editor-in-
:ditors, etc.), (4) presentation to IEEE Publication Board, TAB
Periodicals Board, by end of February 1989, and (5) publication
:).

:e budget for 1990 shows that a quarterly with 5000 copies and
:n have a potential surplus of $14K for the year.  The 5000
() subscribers from IEEE Societies (at $10 per year) and 1000
Ξ Transactions package (which is "guaranteed" at a total of
ubscribers would compare to the approximately 3500 current
:f the International Neural Network Society.

: papers for the initial issues can be obtained from individual
:rs submitted to the 1989 IEEE International Conference on
; "final" papers due by March 1989.  Obtaining the papers for
:al challenge for the Editor-in-Chief, but after the "pipeline" is
:rt will settle somewhat.  It is suggested that there be one
:ral "Editors" (who will represent the several facets of neural
:nber of Associate Editors.  The Editor-in-Chief would have a
:ary, mailing, etc.  A portion of this amount will be used to
:ociate Editor's operational expenses.

## Proposed IEEE Transactions on Neural Networks, 1990

:d from IEEE Staff -- Melvin Olken (212) 705-7178 from
:rtment and Otto Vathke (212) 705-7551 from Publications
· numbers obtained from Otto Vathke were for 1989 so they
to represent costs in 1990.

:tion; 320 pages annually; Income of $80K [1000 copies from
:) and $10 per year per subscriber ($40K)]; Expenses of $66K
and Editor-in-Chief expenses ($10K)]; Surplus Potential of
:es].

**TELEPHONE MEMO**

Kris - Yes 14

Date 12-19

Time 9:00

To R. Marks    Bill Levine

From E.C. Posner    wsl@eneevax.i2
                     umd.edu

Marks    10    Rauch Yes 7

Nick Declaris 9    Lipmann 13

Phone 818·356-4852

Please call ☐    Will call again ☐    Returned your call ☐

Message: Juang Yes 8

∅ Vote yes.

Newcomb: Yes.

Wes: Yes vote on Jan 1.    1.

Litsa: 12/19/88    Yes 3.    2.

Troy Nagle: FAX    3.

Don Bouldin Yes!    5    4

Call received by Amy.

Eberhart - Yes    6

# FAX NOTE

**FROM:**

Prof. H. Troy Nagle
ECE Dept./CSL
N. C. State Univ.
Raleigh, NC 27695-7911
(919) 737-3578
(919) 737-7382 (fax)

**TO:**

Robert J. Marks II
(206) 543--3842

**MESSAGE:**

Bob,

I vote for approval of the INNS/NNC
conference merger agreement.

Troy

Prof. Robert J. Marks II
NNC Chairman Pro tem
Interactive Systems Design Lab
Dept. of EE., Univ. of Washington
Seattle, Washington,

FAX (206) 543-3842

**AT&T**
Bell Laboratories

12/20/88

Dear Prof. Marks.

I hereby vote for the agreement concerning a merger of ICNN with the INNS conference. I assume the San Diego Chapter has offered their inputs in this matter.

Regards.

Bling-Hwang Juang
MH 2D-534
Phone (201) 582-2002

for ASSP society

# MASSACHUSETTS INSTITUTE OF TECHNOLOGY
# LINCOLN LABORATORY

*LEXINGTON, MASSACHUSETTS 02173-0073*

20 December 1988

*Area Code 617*
*981-2711*

Mr. Robert J. Marks, II
NNC Chairman pro tem
NNC Secretary
University of Washington
Department of Electrical Engineering, FT-10
Seattle, WA

Dear Robert:

I vote to accept the agreement endorsed by the NNC Subcommittee concerning a merger of the ICNN with the INNS Conference.

Sincerely,

Dr. Richard P. Lippmann
Representative of ASSP
Society
M.I.T. Lincoln Laboratory

RPL/pmh

**Lockheed** *Missiles & Space Company, Inc.*

Research and Development
3251 Hanover Street, Palo Alto, California 94304

DECEMBER 19, 1988

I hereby vote yes on the merger agreement for
the ICNN with the INNS conference in your letter
of December 14, 1988.

**HERBERT E. RAUCH**
**Lockheed 92-20/254 E**
**3251 Hanover Street**
**Palo Alto, CA 94304 USA**

## IEEE ICNN-88 Conference Committee Members:

Shun-ichi Amari
University of Tokyo
Bunijyo-ku, Tokyo 113, JAPAN
(International Chair, honorary position)

Michael Aronstein
4015 Hancock Street
Suite 101
San Diego, CA. 92110
(619)224-3240
(Finance Committee Chair)


Cleveland Donnelly
430 Pennsylvania Avenue
San Diego, CA. 92103
(619)277-6780
(Hospitality Committee Chair)

Robert Hecht-Nielsen
HNC, Inc.
5501 Oberlin Drive
San Diego, CA. 92121
(619)546-8877
(Conference Committee Chair)

Teuvo Kohonen
Dept. of Technical Physics
Helsinki University of Technology
SF-0 Helsinki, FINLAND
(Conference Chair, honorary position)

Bart Kosko
Dept. Computer Sci. & Neurobiology
University of Southern California
Los Angeles, California 90089-0782
(213)743-6581
(Program Committee Chair)

Tony Materna
HNC, Inc.
5501 Oberlin Drive
San Diego, CA. 92121
(619)546-8877
(Publicity Committee Chair)

Martin McNeill
McNeill Engineering Co.
P. O. Box 27390
San Diego, California 92128
(619)748-7384
(Local Arrangements Committee Chair)

Richard D. Rea
1014 Santa Barbara St.
San Diego, California 92107
(619)222-4774

(Exhibits)

Pat Simpson
10373 Aminito Alvarez
San Diego, CA. 92126
(619)457-5550
(Tutorial Committee Chair)

# REQUEST FOR CONFERENCE INSURANCE

**IEEE**

Regions 1-6
(Conference Held in USA)

Conference Insurance Office
IEEE Service Center
445 Hoes Lane
Piscataway, NJ 08854-4150
(201) 981-0060 Ext. 211

The following coverage is in effect for the conference dates listed below. The form must be completed in full and received by the Conference Insurance Office with a list of the conference officers and committee members at least 90 days prior to the start of the conference.

Conference Name _IEEE International Conference on Neural Networks -1988_

Conference Dates _24-27 July 1988_

Conference Hotel or Center _Sheraton Harbor Island East_

Conference Location (City, State & Zip Code) _San Diego, CA 92101_

CONFERENCE IS FINANCIALLY CO-SPONSORED: ☒ Yes ☐ No

Co-Sponsor Name(s): _IEEE San Diego Section, IEEE TAB Neural Network Committee_

The coverage listed below (except In and Out Robbery) will be furnished to the conference at no direct charge except where additional coverage is requested.

BONDING: ☒ $1,000,000 ($2500 Deductible)
If more than $1,000,000 is required, specify amount and attach explanation $ _____

RENTAL OF EQUIPMENT: ☒ $25,000 ($2500 Deductible)
If more than $25,000 is required, specify amount and attach explanation $ _____

LIABILITY & PROPERTY DAMAGE: ☒ $1,000,000 and $7,000,000 (no deductible) umbrella liability.

LIMITED VOLUNTEER PERSONAL LIABILITY: ☒ $1,000,000
A list of officer and committee members must accompany Request for Conference Insurance.

IN & OUT ROBBERY: (Optional - check box if desired): ☒ $25,000 ($2500 Deductible)
Note: There will be an approximate $100 charge billed directly to the conference.

CONFERENCE WILL CHARTER: ☐ Bus ☐ Other (explain) _____
See special note regarding transportation rental.

CERTIFICATE OF INSURANCE
You may be required to furnish evidence of IEEE Insurance to a third party. If so, indicate name and address of third party and their requirements. *(Please type or print)*

CONFERENCE CHAIRPERSON OR TREASURER - Please type or print the following information and sign this form.

Name _Michael Aronstein_

Conference Title _Finance Chairman_

Address _4015 Hancock St._
_San Diego Ca. 92110_

Phone No. (_619_) _224 3240_

Signature _Michael Aronst_

Date _8 Jun '88_

| FOR OFFICIAL USE ONLY | | | |
|---|---|---|---|
| CONF DATE | Mo | Date | Yr |
| Date Rec'd _____ | | | |
| Date Ack _____ | | | |
| Off&Ctm List _____ | | | |
| Charter Cert _____ | | | |
| ☐ IN & OUT ROBBERY | | | |
| A&A Inv. Req. _____ | | | |
| Inv. to Conf. _____ | | | |
| Check to A&A _____ | | | |
| ☐ INSURANCE CLAIM | | | |
| ☐ FILE COMPLETE | | | |

# IEEE TECHNICAL COUNCIL
## SUMMARY FINANCIAL REPORT FOR IEEE SPONSORED OR COSPONSORED CONFERENCES

See reverse side for instructions on how to complete this form

### CONFERENCE

1. Full title of Conference  IEEE International Conference on Neural Networks
2. Dates of Conference  24-27 July 1988
3. Location of Conference (full name and address)  Sheraton Harbor Island East Hotel
San Diego, CA 92101

### TYPE OF REPORT / CURRENCY USED
4. Indicate type of report by checking one box:
☒ Budget   ☐ Interim Report   ☐ Final Report
5. All income and expense figures below must be in U.S. Dollars. For Conferences held outside the U.S.A., indicate here the local currency (e.g., Swiss Francs) and the conversion rate used (local currency units per 1 U.S. Dollar) and date.

Local currency: $   Conversion rate: _____   Date of conversion rate: _____

### INCOME

| | Budget | Interim Report | Final Report |
|---|---|---|---|
| 6. Registration Fees **(2,000 attendees)** | $ 350,000 | $ | $ |
| 7. Conference Publication Sales | 28,200 | | |
| 8. Exhibits | 37,600 | | |
| 9. Social Functions | 0 | | |
| 10. All Other Conference Receipts | 7,000 | | |
| 11. Total Conference Income | 422,800 | | |
| 12. Advance Loans | 13,000 | | |
| 13. Total Receipts | $ 435,800 | $ | $ |

### EXPENSE

| | Budget | Interim Report | Final Report |
|---|---|---|---|
| 14. notion | $ 30,000 | $ | $ |
| 15. Conference Publications | 86,450 | | |
| 16. Exhibits | 15,000 | | |
| 17. Social Functions | 150,000 | | |
| 18. Administration | 38,500 | | |
| 19. All Other Conference Expenses | | | |
| 20. Total Conference Expense | 319,950 | | |
| 21. Loan Repayments | 13,000 | | |
| 22. Total Outlays | $ 332,950 | $ | $ |

### SURPLUS / (LOSS)

23. Total Receipts (13) $ 435,800      24. Total Outlays (22) $ 332,950

25. Surplus (Loss) – (Item 23 less Item 24) $ 102,850

### POST CONFERENCE DISTRIBUTION   Surplus (Loss) in Item 25 to be distributed as follows:

| Cosponsor Entity | % Share | $ Distributed |
|---|---|---|
| a. IEEE San Diego Section | 50 | |
| b. IEEE TAB Neural Network Committee | 50 | |
| c. | | |
| d. | | |
| | Surplus (Loss) $ | |

### CONFERENCE FINANCIAL INSTITUTION
Name of Bank  California First Bank, Poway Office
Address  12312 Poway Road, Poway, CA 92064
Conference Account Title  IEEE ICNN 1988        Account No. 0791090012
Have you requested IEEE Conference Insurance?   ☒ Yes   ☐ No

SUBMITTED BY:
N.  Michael Arousten  (Arousten)        Tel. No. (619) 224 3240
Address  4015 Hancock A. Suite 101 San Diego Ca. 92110
Conference Position  Finance Chairman

SIGNATURE  Michael Arous        Date 8 Feb 88

Figure 7.1.3.3A   SUMMARY FINANCIAL REPORT FORM

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# IEEE ICNN-88

## CONFERENCE PLAN

### Revision O (DRAFT)
### 8 January 1988

-------------------------------------------------------------------------------

## CONTENTS

1. Overview

2. Technical Program

3. Charter

4. Budget

5. Schedule

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## 1. Overview

IEEE ICNN-88 will be the world's largest conference on neurocomputing in 1988. *Neurocomputing* is the second fundamental information processing paradigm. It is the only known alternative to the *programmed computing* paradigm that has dominated all automated information processing since the invention of the electronic digital computer in the 1940's. Neurocomputing is based upon highly parallel distributed computing structures called *neural networks* which become capable of carrying out useful information processing transformations by means of self-adjustment in response to input data.

Neurocomputing is based upon *transformations;* whereas programmed computing is based upon *algorithms*. This makes neurocomputing technically quite different from ordinary programmed computing. For example, two of the primary focuses of programmed computing are algorithms and software. In neurocomputing the corresponding areas are neural network architectures and neurosoftware. However, for all their differences, neurocomputing and programmed computing share a great many common technological elements. For example, neurocomputer hardware and embedded software are very similar to those found in programmed computers. Neurocomputers - processors that are especially suited for implementing neural networks - attach to standard host computers as coprocessors (using standard digital interfaces) and neural networks are called from host computer software as if they were subroutines or procedures. Thus, while neurocomputing has some new elements, it fits neatly into the existing computer industry

## IEEE PROPRIETARY - DO NOT DISTRIBUTE    1

infrastructure.

At the present time neurocomputing is a comparatively weak technology. The known neural network architectures (approximately 50 types are known, of which about 14 are in common use) have only limited information processing capabilities and each has significant known limitations. Because of this, only a few practical information processing problems can be successfully addressed at the present time. Problems in certain areas of sensor processing, data analysis, control, and knowledge processing seem to be the most amenable to solution with current neurocomputing capabilities. Fortunately, some of the problems in this limited set are of great interest and have significant economic importance.

Notwithstanding its current limitations, interest in neurocomputing has grown explosively over the last two years. Unlike Artificial Intelligence, which has still not found a large end-use market, neurocomputing looks as if it will have a number of near term end-use applications. A recent survey by *Intelligence* newsletter found 157 companies in the United States seriously pursuing major neurocomputing-based products and applications. Many more are exploring the use of neurocomputing as a tool for solving some of their information processing problems. This activity does not stop at the U.S. border. Several companies in Japan and Europe are also exploring applications of neurocomputing, as are the military services of both the U.S. and the U.S.S.R. At least 20 companies dedicated to supplying neurocomputers and related products and services have been founded within the last 18 months. The 1987 IEEE International Conference on Neural Networks (IEEE ICNN-87), which was held in San Diego in June of 1987, had a total attendance in excess of 1600; which made it larger than IEEE ICASSP and several other important IEEE conferences. In summary, activity in neurocomputing continues to grow.

IEEE ICNN-88 is the 1988 installment in a conference series devoted to the technology of neurocomputing in its academic, industrial, commercial, consumer, military, and biomedical engineering aspects. The series is sponsored by the IEEE San Diego Section and the IEEE Technical Activities Board Neural Network Committee (NNC), which is expected to be formally created in Spring 1988. IEEE Technical Societies participate in the meeting via membership in the NNC. Ten IEEE Technical Societies are currently in the process of deciding to join NNC. Non-IEEE Technical Societies participate in the meeting via association with the NNC. Other local IEEE Sections participate in the meeting as both local hosts of the meeting and as cosponsors. The IEEE ICNN-87 (the first conference in the series) was held at the Sheraton Harbor Island Hotel in San Diego, California on Sunday 21 June thru Wednesday 24 June 1987 (Tutorials were held at the hotel on Saturday 20 June 1987). This conference was both a technical and a financial success. It was cosponsored by the IEEE Systems, Man, and Cybernetics Society and it was held with the cooperation of the IEEE Control Systems, and Engineering in Medicine and Biology Societies. A healthy surplus was produced, some of which is being made available to fund up-front costs for IEEE ICNN-88.

IEEE ICNN-88 will be held at the Sheraton Harbor Island Hotel in San Diego, California on Sunday 24 July thru Wednesday 27 July 1988. Tutorials, which are not part of the Conference this year, will be held at the hotel on Saturday 23 July 1988. The tutorials are *being cosponsor* by the IEEE San Diego Section Tutorials Committee and the IEEE Educational Activities Board. IEEE ICNN-88 is expected to attract over 2,000 attendees; which will make it one of IEEE's largest conferences. The emphasis in this year's conference will be to fix the minor problems identified with IEEE ICNN-87, to run a highly successful IEEE ICNN-88 (both technically and financially), and to establish the NNC as a long-term, stable, technical coalition of the IEEE San Diego Section and other IEEE Sections and Societies that can successfully organize and run future conferences in the series in a consistent manner.

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## 2. Technical Program (TENTATIVE)

IEEE ICNN-88 is being organized by the following committees:

**# - Note: these people have not yet been contacted or have not yet finally agreed to participate. Their names should not be released under any circumstances.**

1. IEEE ICNN-88 Steering Committee

- Larry Hamerman, Chair
- TBD - From IEEE San Diego Section
- TBD - From NNC
- TBD - From NNC

2. IEEE ICNN-88 Conference Committee

Conference Chair:     Teuvo Kohonen
(honorary position)

International Chairs:     Shunichi Amari, University of Tokyo, JAPAN
                        Kunihiko Fukushima, NHK Laboratories, JAPAN

(honorary positions)

- Robert Hecht-Nielsen, Chair
- Cleveland Berkeley, Hospitality Committee Chair
- Bart Kosko, Program Committee Chair
- Tony Materna, Publicity Committee Chair
- Martin McNeill, Local Arrangements Committee Chair
- Richard Rea, Exhibits Committee Chair
- Michael Aronstein - Finance Committee Chair
- TBD - From NNC
- TBD - From NNC
- TBD - From NNC

3. IEEE ICNN-88 Program Committee

- Bart Kosko, Program Committee Chair and Technical Sessions Program Chair
- TBD - Plenary Sessions Program Chair
- TBD - Poster Sessions Program Chair
- TBD - Special Sessions Program Chair
- TBD - Tutorial Sessions Program Chair
- Shunichi Amari, Tokyo University , JAPAN
- James Anderson, Brown University
- Michael Arbib, University of Southern California
- Elle Bienenstock, University of Paris - South, FRANCE
- Eduardo R. Caianiello, University of Salerno, ITALY
- David Casasent, Carnegie-Mellon University

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# IEEE PROPRIETARY - DO NOT DISTRIBUTE

- John Caulfield, University of Alabama at Huntsville
- John Daugman, Harvard University
- Rolf Eckmiller, University of Dusseldorf, GERMANY
- Jeffrey Elman, University of California at San Diego
- Walter Freeman, University of California, Berkeley
- Kunihiko Fukushima, NHK Laboratories, Tokyo, JAPAN
- Lee Giles, Air Force Office of Scientific Research
- Joseph Goodman, Stanford University
- Stephen Grossberg, Boston University
- Morris Hirsch, University of California at Berkeley
- John Hopfield, California Institute of Technology #
- Teuvo Kohonen, Helsinki University of Technology, FINLAND
- Christopher von der Malsburg, University of Southern California
- David Parker, Palo Alto, California
- Andres Pellionez, New York University
- David Rumelhart, Stanford University
- Terrence Sejnowski, Johns Hopkins University
- Ira Skurnick, DARPA
- Allen Stubberud, National Science Foundation
                    and University of California at Irvine
- Harold Szu, Naval Research Laboratory
- Carme Torras, Cybernetics Institute, Barcelona, SPAIN #
- Bernard Widrow, Stanford University
- Lofti Zadeh, University of California at Berkeley

4. Publications Committee

- TBD, Chair
- TBD

5. Publicity Committee

- Tony Materna, Chair
- TBD

6. Finance Committee

- Michael Aronstein - Finance Committee Chair
- TBD - From Cosponsoring IEEE Technical Society
- TBD - From Cosponsoring IEEE Technical Society

7. Exhibits Committee

- Richard Rea, Chair
- TBD

8. Hospitality Committee

- Cleveland Donnelly, Chair
- TBD

9. Local Arrangements Committee

- Martin McNeill, Chair

# IEEE PROPRIETARY - DO NOT DISTRIBUTE    4

# IEEE PROPRIETARY - DO NOT DISTRIBUTE

- TBD
- TBD
- TBD

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The Conference Technical Program consists of Technical Sessions, Plenary Sessions, and a Reception. These are now described:

NOTE: It is anticipated that single-topic Special Sessions of invited papers shall be organized and presented concurrently with the regular Technical Sessions of the Conference.

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Technical Sessions (to be held Sunday 24 July thru Wednesday 27 July 1988)

(NOTE: Each Session lasts 4 hours, Session Chair's names are listed)

## SUNDAY

Morning Sessions (8am - 12pm)

Self-Organization....................... Teuvo Kohonen

Network Dynamics.................... Morris Hirsch

Afternoon Sessions (1pm-5pm)

Associative Memory................... Bart Kosko

Learning Algorithms I................ James Anderson
Elle Bienenstock

## MONDAY

Morning Sessions (8am - 12pm)

Network Architectures I.............. Stephen Grossberg
John Hertz

Learning Algorithms II............... David Parker
Bernard Widrow

Afternoon Sessions (1pm-5pm)

Image Processing ...................... David Casasent
John Daugman

Network Architectures II............. Shunichi Amari
Carme Torras

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## TUESDAY

Morning Sessions (8am - 12pm)

Vision...................................... Kunihiko Fukushima
Christopher von der Malsburg

Neurobiological Connections......... Michael Arbib
Walter Freeman

Afternoon Sessions (1pm-5pm)

Speech Recognition & Synthesis..... Jeffrey Elman
Terrence Sejnowski

Electronic Neurocomputers........... Donald Hammerstrom
Robert Hecht-Nielsen

## WEDNESDAY

Morning Sessions (8am - 12pm)

Optical Neurocomputers............... Joseph Goodman
Keith Jenkins

Combinatorial Optimization........... Harold Szu

Afternoon Sessions (1pm-5pm)

Novel Applications..................... Lee Giles

Robotics & Control.................... Rolf Eckmiller
Andres Pellionez

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Plenary Sessions and Reception (the evenings of Saturday 23 July, Sunday 24 July, Monday 25 July, and Tuesday 26 July 1988)

## SATURDAY

Wine and Cheese Reception - (6pm - 8pm)

Industry Panel - Tom Schwartz, Moderator - (8pm - 10pm)

## SUNDAY

Plenary Session I (8pm - 10pm)

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# IEEE PROPRIETARY - DO NOT DISTRIBUTE

Parallel Distributed Processing - David Rumelhart

Architectures for Neural Preprocessing - Carver Mead

## MONDAY

Plenary Session II (8pm - 10pm)

The First Years of Neurocomputing - Eduardo Caianiello

Vistas in Optical Neurocomputer Design - John Caulfield

## TUESDAY

Poolside Party (6pm - 8pm)

Government Funding Panel  - Ira Skurnick, Moderator
(8pm --->)

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### 3. Conference Charter

IEEE ICNN-88 shall be governed by the provisions of the following Charter

I. General

    • The official name of the 1988 Conference shall be:  IEEE ICNN-88.

    • The Conference shall be held at the Sheraton Harbor Island East Hotel East in San Diego, California, from 23 July  1988 thru 27 July 1988 in accordance with the official technical program (Section 2 of this Conference Plan document), which is hereby incorporated as part of this Charter.

    • IEEE ICNN-88 and all subsequent ICNN conferences are sponsored by the IEEE San Diego Section,              the IEEE TAB Neural Network Committee (NNC) and other IEEE Sections (these bodies are hereafter referred to as the *sponsoring entities* ).

    • The Conference shall be held annually and its organization will conform with the requirements and guidelines of IEEE, including the procedures for review and audit of the budget by the Steering Committee.  The proposed budget must be approved by the Steering Committee prior to its submittal to IEEE.  The proposed budget for a Conference must be submitted to all sponsoring entities at least 60 days in advance of its approval by the Steering Committee.  A sponsoring or cosponsoring entity can indicate its intent to withdraw from participation in ICNN prior to approval by the Steering Committee of the budget for the next meeting.  If a budget has been approved, an entity can withdraw from future activities but must continue to cosponsor the planned meeting.  If an entity withdraws from the Steering Committee, its share of future meetings is divided equally among the remaining members (with the exception of the IEEE San Diego Section, as noted below).

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● The sponsoring entities each participate financially in ICNN and share Conference up-front expenses and Conference profit or loss in accordance with fixed percentages. For 1988, NNC's percentage is 50% and the IEEE San Diego's percentage is 50%. The ICNN will be held in San Diego every second year, if authorized by the San Diego Section. When the ICNN is held in San Diego in 1990 and beyond, the Section's percentage will be 30% and the percentage for the NNC (and perhaps other technical groups) will be 70%. In years in which the ICNN is held elsewhere (outside San Diego), the NNC and the ICNN Steering Committee will negotiate an agreement with local IEEE entitities (sections and chapters) to co-sponsor the meeting. The exact percentages will be determined as part of the negotiating process.

• For each year's ICNN a Steering Committee shall be assembled from the sponsoring entities, with each entity's numerical participation in the committee in proportion to their percentage of financial participation. Members of the Steering Committee shall serve two-year terms, and thus the members changed in any year shall be limited to those whose terms are expiring. The size of the committee cannot be expanded at a rate greater than two members per year. Nominally, the Steering Committee for a given year's ICNN becomes activated two years before the planned date of the meeting. The IEEE ICNN-88 Steering Committee shall have four members. One member appointed to the IEEE ICNN-88 Steering Committee by NNC and one member appointed by the IEEE San Diego Section shall each serve for only one year. The purpose of the Steering Committee is to select the Chair of the Conference Committee and to oversee the planning and operation of the Conference. The Steering Committee shall act as Trustees for the IEEE with administrative responsibility for the Conference. The Steering Committee is the final authority for all decisions concerning ICNN. All material decisions affecting the Conference must be approved by a majority of the Steering Committee, including major changes to this Conference Charter. In the event of a deadlock, the matter shall be submitted to the current President of the IEEE for a final binding decision.

• The Steering Committee for the IEEE ICNN shall elect biannually a Chair from among its current membership. The Chair shall serve as focus for all communications and shall direct, on behalf of the Committee, the operational matters of the Committee. For the duration of the office of Chairman, that individual will not be considered to be a representative of his/her respective entity, therefore able to represent more freely the overall objectives of the Conference. On a biannual basis, the Committee shall also elect a Secretary and Treasurer. In addition to the usual duties regarding minutes, reports, records, etc., the Secretary shall serve as Chair pro tem in the absence of the Chair. When the election to office of a Steering Committee member requires an extension of the member's term of appointment by the sponsoring entity, it is expected that such an extension will take place. This extension will be for either one or two years as necessary, to maintain the staggered appointments of members.

• The Section in which the Conference is held shall be offered the opportunity to cosponsor the ICNN. Should the Section decline to accept the offer, its percentage financial participation in the Conference shall revert to the other sponsoring entitities.

• The Conference Steering Committee shall appoint the General Chair of ICNN-89 and beyond. The General Chair shall nominate the Conference Committee, the Program

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Chair(s), and the other Conference Operating Committee Chairs. Appointment of all Conference Committee, Program Committee, and Conference Operating Committee Chairs and members is subject to majority vote approval by the Steering Committee. The Steering Committee shall serve the function of an Advisory Board reviewing and offering guidance on the operational aspects and technical content of the Conference.

• The staging of IEEE ICNN-88 shall be managed by Nomi Feldman of Meeting Management, Inc., San Diego (who managed IEEE ICNN-87).

• The IEEE San Diego Section shall enter into a contract with the Sheraton Harbor Island East Hotel securing the the use of the hotel's facilities for the conference following satisfactory negotiations.

• The official technical program of the conference shall be printed and distributed to registrants at the conference registration desk. The program shall list all of the scheduled tutorials, technical presentations, and plenary talks and shall give the name and affiliation of the speakers.

• The Conference record containing the technical papers corresponding to the talks scheduled for presentation at the conference (along with other papers accepted for publication in the record by the joint actions of the Technical Program Committee and the Conference Committee) shall be distributed to registrants at the conference registration desk. This conference record shall not carry any individual's name(s), but shall be listed strictly as the IEEE ICNN-88 conference record. All papers presented at the Conference and in its record must be reviewed to assure high technical standards.


II. Registration and Logistics

• Conference registration will be $190 before 1 April 1988, $240 between 1 April 1988 and 30 June 1988, and $280 between 1 July 1988 and 27 July 1988. One-day registration will be available at the door for $110. Exhibit hall and poster session entrance shall be free to conference registrants; others will be admitted by exhibitor ticket or $10 cash. Full time students showing school picture ID cards verifying their full-time student status (or presenting a school picture ID card and a letter from their school to verify their full-time student status) will be admitted for $90 (for any duration). Student registration shall not include the proceedings (which can be ordered separately from IEEE Press after the Conference). IEEE Members shall receive a 20% discount on all prices except one-day registration, exhibit hall registration, student registration, and tutorials.

• Each paid registrant at the conference shall have their name, mailing address, telephone number(s), and electronic mail address(es) accurately recorded in the official conference attendance list. This list shall be owned, copyrighted, and controlled by the IEEE, Steering Committee. This list must be controlled in accordance with IEEE rules and procedures, as directed by the Steering Committee.

• Each paid registrant shall have an official pin-on or clip-on IEEE ICNN-88 Conference Badge prepared for them at the registration counter. This badge shall have a border that is color coded to indicate: the day of registration for one-day registration, full paid registrant status, or student registration status. The badge shall present the registrant's name, organizational affiliation, and city/state/country in large black letters on a white background.

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## III. Technical and Plenary Sessions

• 16 technical sessions are planned for the Conference between Sunday 24 July and Wednesday 27 July 1988. The official technical session schedule presented in Section 2 of this document is hereby adopted.

• Each of the 16 technical sessions of the conference shall be 4 hours long. A maximum of 10 papers shall be presented in any one session. No individual talk in any session shall be shorter than 20 minutes, nor longer than 30 minutes. Each talk shall have a separate question and answer period of not less than 5 minutes appended to it.

• No individual will be able to present more than one talk in the technical sessions of the conference. Of all of the talks given in the technical sessions and all of the poster session papers, no individual will be listed as author or co-author of more than two. Likewise, of all of the papers presented in the conference record, no individual will be listed as author or co-author of more than two such papers.

• The Conference Chair(s), International Conference Chair(s) and Plenary Session Speakers shall have their round-trip transportation to the conference, lodging at the conference hotel, and per diem ($30 per day) paid for by the conference. This practice will not continue after IEEE ICNN-88, except as individually approved by the IEEE ICNN Steering Committee.

## IV. Exhibits

### Structure

•The IEEE ICNN-88 exhibit hall will be divided into three functional areas: an exhibit area; a lounge; and an area for poster sessions.

•The exhibit area will accommodate 55-60 booths. The area will be structured with four 8-booth islands in the center. The remainder of the booths will occupy the periphery of the exhibit area. A preliminary floor plan is included as Figure Exhibits-1.

•All standard booths will be 10 feet wide and 8 feet deep and will have draped backwalls and 3 foot high dividers. Booth height may not exceed 8 feet with certain exceptions. The 8 foot height limitation may be exceeded for peripheral exhibits and exhibit islands. Booth height may not exceed 10 feet in any case, and may be subject to area ceiling limitations caused by air conditioning and piping. No exhibit may span an isle in any way. Exposed unfinished sides of exhibit backgrounds must be draped to present an attractive appearance and so as not to interfere with adjacent exhibits. Multiple contiguous exhibits may eliminate internal dividers.

### Booth Classes and Pricing

•Booths will be offered in three classes. The classes, their prices, and maximum class limits are shown below.

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| Class | Abbr | Limit | Price |
|---|---|---|---|
| Commercial | CO | 60 | 800 |
| University/ Publisher | UP | 10 | 400 |
| Science Fair | SF | 10 | 200 |

## Poster Sessions

•An estimated 200 poster sessions will be held during the four day conference. The actual number of sessions, their selection, and scheduling will be determined by the Conference Program Chairman.

## The Lounge

•The function of the lounge is to provide an area wherein the visitors and conference attendees may rest, converse, and take refreshments. Lounge furnishings shall be provided by the hotel and conference service contractor. Refreshments shall be provided by the hotel and shall include coffee, soft drinks, cookies, pastries and fruits.

## Publicity and Exhibitor Solicitation

•The IEEE ICNN-88 conference exhibits will be publicized through general conference press releases, paid advertisements, and direct mailings. In addition, a special direct mailing advertising the availability of exhibit space at the conference will be sent to potential exhibitors. The special direct mail piece will be published in January 1988.

•An "Information for Exhibitors" package will be published by the conference to be sent to all prospective exhibitors. This package will contain an application, exhibit rules and regulations, and a layout of the exhibit hall. The package will be developed and published for mailing in January 1988. This package will be sent to all interested in exhibiting at the IEEE ICNN-88.

•A data base of prospective exhibitors will be developed. This data base will be used to record the identity of all prospective exhibitors and their exhibit status at the IEEE ICNN-88.

## Reservations and Assignments

•Booth space reservations will be required. Reservations for a booth within a specific class will be made upon receipt of a completed exhibit application (contract) and a deposit in the amount of 25% of the booth cost. Reservations for multiple booth exhibits will require a deposit for each booth ordered.

•Booth assignments will be made by the Exhibits Chairman at the end of each month for all unassigned booths requested for which deposits have been received. When making assignments, consideration will be given to class of exhibit, exhibit size, exhibit points accumulated from IEEE ICNN-87, and the date the application was received. All booth assignments will be completed by July 1, 1988, and reservations will not be accepted after this date unless specifically directed by the IEEE ICNN-88 organizing committee. The status of the exhibit area and booth assignments will be reported to exhibitors periodically.

•UP and SF booth requests will be allocated from booth areas designated for these

## IEEE PROPRIETARY - DO NOT DISTRIBUTE    11

classes.

•Every effort will be made to assign booths in accordance with exhibitor wishes. In the event of conflicts, the exhibitors affected will be notified of the decision of IEEE ICNN-88. In any event, the decision of the IEEE ICNN is final. The IEEE ICNN-88 reserves the right to adjust the floor plan and reallocate exhibitors as necessary. Exhibitors will be notified of the reasons for any such change.

Contractors

•A conference service contractor will be selected to handle shipping and storage of exhibits, drayage, set-up and dismantling of exhibits; supply carpeting, furniture and miscellaneous supplies to the conference; rent furniture, electrical equipment and services, and generally support the conference and exhibitors.

•Upon request, an exhibitor may obtain an exhibitor's kit from the conference service contractor. This kit will contain information on the services and supplies available from the contractor.

•Exhibit security will be provided using hotel security and the conference security contractor. It is anticipated that three contractor guards will be required to provide exhibit hall security during daytime operating hours. One guard will be required overnight.

•Additional contracting shall be arranged as necessary.

Hours of Operations

•The exhibit hall will be operation from July 24, 1988 through July 26, 1988, from 8:30am to 6:00pm, and on July 27, 1988 from 8:30 to 4:00pm. Set up of exhibits will take place on Saturday, July 23, 1988 from 2:00pm to 8:00pm. Dismantling of exhibits will take place on July 27, 1988 from 4:00pm to 7:00pm.

IEEE ICNN-88 Exhibits Program

•An Exhibits Program will be published announcing all exhibitors to the IEEE ICNN-88 conference.

Entry into Exhibit Area

•For each day that an attendee has paid to attend the conference, that attendee is entitled to one free admission to the exhibit hall. Purchase of an exhibit at the IEEE ICNN-88 entitles the exhibitor to 10 passes to the exhibit hall for the exhibit staff. Additional staff passes will be furnished on request. An exhibitor will also receive five free guest passes for each booth purchased. Exhibit staff and guest passes will be good for entry to the exhibit hall only. Additional daily passes to the exhibit hall may be purchased at the door for 10 dollars for each day the exhibit hall is open.

Exhibitor Registration

•An exhibitor registration desk will be open on the days of the conference. The exhibitor and staff may check in, register and pick up registration materials at this time. Exhibitor materials include copies of the Exhibits Program, special instructions, and staff and guest passes. An exhibitor may also pre-register to the conference if so desired.

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# UNIVERSITY OF WASHINGTON
## SEATTLE, WASHINGTON

*Interactive Systems Design Laboratory*
*Department of Electrical Engineering, FT-10*
*Telephone: (206) 543-6990, 543-6061 or 543-2150*
*FAX: (206) 543-3842; marks@blake.acs.washington.edu*

December 15, 1988

TO:     NNC Publications Subcommittee Members
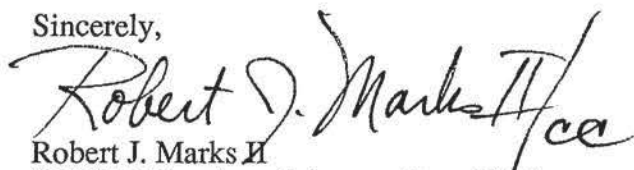
Robert W. Newcomb
FAX: (301) 454-1837

Evangelia Tzanakou
FAX: (201) 932-5313

Herb Rauch
FAX: (415) 424-3333

This is a follow-up to our phone conversation. Please look over the attached letter and proposal and see if you concur with the contents. I would like to get it in the mail by Tuesday of next week if it is the consensus of this Subcommittee.

Both the letter and the proposal were drafted by Herb. He did a superb job.

Sincerely,

Robert J. Marks II
NNC Publications Subcommittee, Chair

RJM:cc

Attachments

# UNIVERSITY OF WASHINGTON
## SEATTLE, WASHINGTON

*Interactive Systems Design Laboratory*
*Department of Electrical Engineering, FT-10*
*Telephone: (206) 543-6990, 543-6061 or 543-2150*
*FAX: (206) 543-3842; marks@blake.acs.washington.edu*

December 14, 1988

TO:  Society Presidents of the IEEE Neural Network Committee

I am the Secretary of the IEEE Neural Network Committee (NNC) of which your society is a member. At the November 28 meeting of the NNC in Denver, Troy Nagle announced his resignation as NNC Chairman because he was elected 1989 IEEE Vice President for Technical Activities, and he could not hold both offices. As NNC Secretary, I assumed the position of NNC Chairman pro tem.

At the NNC meeting in Denver, a proposal was made to have an IEEE Neural Network publication starting in 1990. Prior to his resignation, Troy Nagle appointed me as Chairman of the four person NNC Publication Subcommittee appointed to investigate this possibility in more detail. The NNC Publication Subcommittee has discovered that in order to have a new IEEE publication starting in 1990, we must make a formal proposal to the IEEE Publication Committee which should meet in early February 1989. The four members of the NNC Publication Subcommittee have begun to prepare the formal proposal at the same time we are asking for your inputs. Our intent is to call the proposed publication the IEEE Transactions on Neural Networks. A slightly edited version of the informal proposal made at the NNC Denver meeting is enclosed.

The purposes of this letter are to:

(1)  alert you to the plans for the 1990 publication

(2)  let you alert your society Board of Governors

(3)  solicit your comments

(4)  solicit your suggestions for Editors or Associate Editors

We intend to send to you a draft of the formal proposal early in January, based on the information we gather in the next several weeks.

Below are listed the names, addresses, and telephone numbers of the four members of the NNC Publications Subcommittee.

Society Presidents of the IEEE NNC
Page 2

　　　Please call me directly or contact any member of the subcommittee if you have
questions. Thanks for your support.

Sincerely,

Robert J. Marks II
Professor

RJM:cc

Enclosure

cc: NNC Members

Members of NNC Publications Subcommittee:

　　　Robert J. Marks II, Chair
　　　Electrical Engineering Department, FT-10
　　　University of Washington
　　　Seattle, WA 98195
　　　(206) 543-6990
　　　FAX: (206) 543-3842
　　　Computer mail: marks@blake.acs.washington.edu

　　　Robert W. Newcomb
　　　Microsystems Laboratory
　　　Electrical Engineering Department
　　　University of Maryland
　　　College Park, MD 20742
　　　(301) 454-6869
　　　FAX: (301) 454-1837
　　　Computer mail: newcomb@eneevax.umd.edu

　　　Evangelia Tzanakou
　　　Biomedical Engineering
　　　Rutgers University
　　　P.O. Box 909
　　　Piscataway, NJ 08854
　　　(201) 932-2037
　　　FAX: (201) 932-5313
　　　Computer mail: ETZANAKO@elbereth.rutgers.edu

　　　Herbert E. Rauch
　　　Lockheed
　　　Dept. 92-20, Building 254E
　　　3215 Hanover Street
　　　Palo Alto, CA 94304
　　　(415) 424-2704
　　　FAX: (415) 424-3333

## Proposal for IEEE Transactions on Neural Networks
### (14 December 1988)

**Introduction and Summary**  We propose publication of the subject Transactions on a quarterly basis beginning early in 1990.  The time line is (1) approval by the Neural Network Committee, (2) subsequent approval in the next few months by constituent societies, (3) at the same time preparation of detailed editorial plans (including Editor-in-Chief, Editors, Associate Editors, etc.), (4) presentation to IEEE Publication Board, TAB Finance Board, and TAB Periodicals Board, by end of February 1989, and (5) publication starting first quarter in 1990.

**Proposed Publication**  The budget for 1990 shows that a quarterly with 5000 copies and 320 pages for the year can have a potential surplus of $14K for the year.  The 5000 copies would be from 4000 subscribers from IEEE Societies (at $10 per year) and 1000 subscribers from the IEEE Transactions package (which is "guaranteed" at a total of $32K).  The 4000 IEEE subscribers would compare to the approximately 3500 current subscribers to the journal of the International Neural Network Society.

**Editorial Procedure**  The papers for the initial issues can be obtained from individual solicitation and from papers submitted to the 1989 IEEE International Conference on Neural Networks which has "final" papers due by March 1989.  Obtaining the papers for the initial issues will be a real challenge for the Editor-in-Chief, but after the "pipeline" is filled, the publication effort will settle somewhat.  It is suggested that there be one "Editor-in-Chief" plus several "Editors" (who will represent the several facets of neural network efforts) plus a number of Associate Editors.  The Editor-in-Chief would have a budget of $10K for secretary, mailing etc.

**Preliminary Budget for Proposed IEEE Transactions on Neural Networks, 1990 Calendar Year**

Note:  Information obtained from IEEE Staff -- Melvin Olken (212) 705-7178 from Technical Activities Department and Otto Vathke (212) 705-7551 from Publications Department.  The expense numbers obtained from Otto Vathke were for 1989 so they have been increased by 5% to represent costs in 1990.

**Budget:**  Quarterly publication; 320 pages annually; Income of $80K [1000 copies from Transactions package ($40K) and $10 per year per subscriber ($40K)]; Expenses of $66K [IEEE Publications ($56K) and Editor expenses ($10K)]; Surplus Potential of $14K [Income minus expenses].

STANFORD UNIVERSITY, STANFORD, CALIFORNIA 94305

JOSEPH W. GOODMAN
WILLIAM E. AYER PROFESSOR OF ELECTRICAL ENGINEERING
CHAIRMAN, DEPARTMENT OF ELECTRICAL ENGINEERING

McCULLOUGH 150
STANFORD, CALIFORNIA 94305-4055
(415) 723-5782

December 28, 1988

Prof. Robert J. Marks
Department of Electrical Engineering
University of Washington
Seattle, Washington

Dear Bob:

Due to the pressure of duties and the fact that I only occasionally attend neural network meetings, I have been unable to participate in the deliberations of the IEEE Neural Networks Committee the way I would have liked. I do want you to know, however, that I have read the proposed agreement between the NNC and the INNS and I heartily endorse it. Such agreements are sometimes difficult to achieve, and those involved should be proud of what they have accomplished.

Best regards,

Joe

# IEEE PROPRIETARY - DO NOT DISTRIBUTE

### Contingency Planning

•In the event that there is an overwhelming demand for booth space at the conference, and the conference is able to sell booths in excess of the 55-60 planned, the areas allocated for the lounge and poster session area shall be used for additional exhibit booths. The lounge and poster session areas shall be reduced in size to accommodate the added exhibit booth requirements. In such an event, and as necessary, arrangements shall be made to accommodate serving refreshments and providing space for the poster sessions elsewhere at the conference.

### Fire Laws and Safety

The exhibit area will be designed in accordance with local city fire codes, and a permit will be obtained.
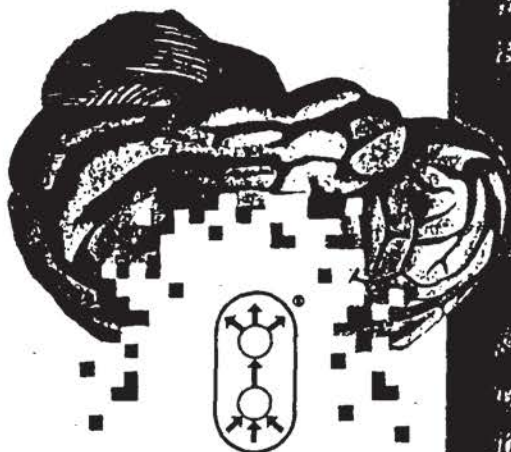
**Signatures:**

---

Chairman
San Diego Section

Chairman
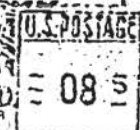IEEE Neural Networks Committee

---

Director
IEEE Region 6

Director
IEEE Division X

---

IEEE Executive Director

IEEE
ANNUAL
INTERNATIONAL
CONFERENCE ON
NEURAL NETWORKS
1770 Tansy Street
San Diego, CA 92121

5505086 F            979
H T NAGLE            HTI 4
ECE DEPT
NCSU

| Chairs | CONFERENCE CHAIR | Teuvo Kohonen |
|---|---|---|
| | INTERNATIONAL CHAIRS | Shunichi Amari, Kunihiko Fukushima |

**Program Committee**

CHAIR — Bart Kosko

COMMITTEE: Shunichi Amari, James Anderson, Michael Arbib, Elle Bienenstock, Eduardo R. Caianiello, David Casasent, John Caulfield, John Daugman, Rolf Eckmiller, Jeffrey Elman, Walter Freeman, Kunihiko Fukushima, Lee Giles, Joseph Goodman, Stephen Grossberg, Morris Hirsch, Teuvo Kohonen, Christopher von der Malsburg, David Parker, Andres Pellionez, David Rumelhart, Tom Schwartz, Terrence Sejnowski, Ira Skurnick, Allen Stubberud, Bernard Widrow, Lofti Zadeh.

**Organizing Committee**

CHAIR — Robert Hecht-Nielsen

COMMITTEE: Michael Aronstein, Cleveland Donnelly, Bart Kosko, Tony Materna, Martin McNeill, Richard Rea, Pat Simpson.

**Conference**

TECHNICAL SESSION SCHEDULE: Each session will have approximately ten papers and will run for half a day. A poster session will run each morning and afternoon, Sunday through Wednesday. Plenary Sessions will run for two hours each evening.

**Tutorials**

*14 tutorials are planned for Saturday July 23, 1988*

| 1 | NEUROBIOLOGICAL REVIEW | Michael Arbib |
|---|---|---|
| 2 | ADAPTIVE RESONANCE | Gail Carpenter |
| 3 | PATTERN RECOGNITION REVIEW | David Casasent |
| 4 | OPTICAL NEUROCOMPUTERS | John Caulfield |
| 5 | ADAPTIVE PATTERN RECOGNITION | Leon Cooper |
| 6 | VISION | John Daugman |
| 7 | COMPETITIVE AND COOPERATIVE LEARNING | Stephen Grossberg |
| 8 | NEUROCOMPUTING APPLICATIONS | Robert Hecht-Nielsen |
| 9 | DYNAMICAL SYSTEMS REVIEW | Morris Hirsch |
| 10 | SELF-ORGANIZING FEATURE MAPS | Teuvo Kohonen |
| 11 | ASSOCIATIVE MEMORY | Bart Kosko |
| 12 | PARALLEL DISTRIBUTED PROCESSING | David Rumelhart |
| 13 | SPEECH | Terrence Sejnowski |
| 14 | ADAPTIVE NEURAL NETWORKS | Bernard Widrow |

*Each tutorial will last 2 hours and may be presented up to 3 times, depending on demand. Tutorials are $125 each or 4 for $450. Attendance in each tutorial presentation is limited to 100 participants. Registration will be on a first-come first-served basis. Early registration is strongly advised, as the tutorials are expected to fill up rapidly. Only registered conference participants may register for tutorials.*

| *Plenary Speakers* | Eduardo Caianiello, John Caulfield, Carver Mead, Marvin Minsky, David Rumelhart | |
|---|---|---|
| *Sessions & Chairs* | SELF-ORGANIZATION | Teuvo Kohonen, *Helsinki University of Technology* |
| | NETWORK DYNAMICS | Morris Hirsch, *University of California, Berkeley* |
| | ASSOCIATIVE MEMORY | Bart Kosko, *University of Southern California*<br>Carmen Torras, *Institut de Cibernetica, Spain* |
| | LEARNING ALGORITHMS I | James Anderson, *Brown University*<br>Elle Bienenstock, *University of Paris, South* |
| | NETWORK ARCHITECTURES I | John Hertz, *Nordita, Denmark*<br>Bobby Hunt, *SAIC, Tucson* |
| | LEARNING ALGORITHMS II | David Parker, *Palo Alto, California*<br>Bernard Widrow, *Stanford University* |
| | IMAGE PROCESSING | David Casasent, *Carnegie-Mellon University*<br>John Daugman, *Harvard University* |
| | NETWORK ARCHITECTURES II | Shunichi Amari, *University of Tokyo*<br>Charles Elbaum, *Brown University* |
| | VISION | Kunihiko Fukushima, *NHK Labs. Tokyo*<br>Christopher von der Malsburg, *University of Southern California* |
| | NEUROBIOLOGICAL CONNECTIONS | Michael Arbib, *University of Southern California*<br>Walter Freeman, *University of California, Berkeley* |
| | SPEECH RECOGNITION & SYNTHESIS | Jeffrey Elman, *University of California, San Diego*<br>Terrence Sejnowski, *Johns Hopkins University* |
| | ELECTRONIC NEUROCOMPUTERS | Dan Hammerstrom, *Oregon Graduate Center*<br>Robert Hecht-Nielsen, *HNC, Inc.* |
| | OPTICAL NEUROCOMPUTERS | Joseph Goodman, *Stanford University*<br>Keith Jenkins, *University of Southern California* |
| | COMBINATORIAL OPTIMIZATION | Bernard Soffer, *Hughes Research Lab*<br>Harold Szu, *Naval Research Laboratory* |
| | NOVEL APPLICATIONS | Lee Giles, *Air Force Office of Scientific Research*<br>David Willshaw, *University of Edinburgh* |
| | ROBOTICS & CONTROL | Rolf Eckmiller, *University of Dusseldorf*<br>Andres Pellionez, *New York University* |

*See inside for complete schedule*

## International Conference on Neural Networks 1988

### July 24-27, 1988
### San Diego, California

The San Diego IEEE Section and the IEEE Technical Activities Board Neural Network Committee welcome neural network enthusiasts in industry, academia and government worldwide to participate in the IEEE 1988 International Conference on Neural Networks, July 24-27 at the Sheraton Harbor Island East Hotel in San Diego, California.

The annual international gathering is devoted to the technology of neurocomputing in its academic, industrial, commercial, consumer, government and biomedical engineering aspects. IEEE ICNN 88 features the leading academic and industry experts. Conference technical sessions will report the latest theoretical advances as well as descriptions of neurocomputing technology and applications.

### Call for Papers
Deadline April 1, 1988

For those contributing papers to the conference, papers must be postmarked no later than April 1, 1988, and submitted in five copies. All papers must be completed within eight pages in length including figures, tables and references. There will be a charge for papers exceeding eight pages. Papers must be camera-ready on 8½ by 11 white paper with title, author name(s) and affiliation(s) all at the top of the first page followed by abstract. Format is one-column in Times or similar font style, 10 point or larger. Margins must be one inch on all four sides. All text, figures, captions and references must be clean, sharp, readable, and high contrast.

Papers will be printed in the IEEE ICNN 88 Proceedings as submitted; Proceedings will be ready at the Conference. A covering letter must be submitted with your paper and show: 1. Title of paper. 2. Name, address and telephone number of corresponding author. 3. Your choice of technical session (one only) in which you wish to present your paper. See Technical Sessions Program. After acceptance, the author must sign and return a standard IEEE copyright agreement.

No substantial part of this paper can be presented elsewhere.

Send papers to:
Nomi Feldman
IEEE ICNN 88 Conference Secretariat
3770 Tansy Street
San Diego, CA 92121

### Exhibit Information

The exhibit portion of IEEE ICNN 88 will be larger than that of IEEE ICNN 87 in both attendance and sponsors. Exhibitors will present the latest innovations in neurocomputers, neurosoftware and applications. IEEE ICNN 88 anticipates many new commercial introductions, with a focus on applications and engineering. IEEE ICNN 88 will also feature company-sponsored booths for employee recruitment.

The ICNN has become the neural network industry's largest trade show. Early exhibit space reservations are advised. Booth assignments are made on a first-come, first-served basis. Interested exhibitors should contact Richard Rea at (619) 222-7447.

### Publicity Liaison

Requests for press credentials and all other media inquiries should be directed to:
Tammy Smith/Sue Varga
Smith-Masar-Johnston Marketing Communications
3530 Camino Del Rio North
Suite 309
San Diego, CA 92108

(619) 281-8991

## Program for Technical Sessions

| | Morning Sessions<br>*8am-Noon* | Afternoon Sessions<br>*1pm-5pm* |
|---|---|---|
| **SUNDAY, JULY 24** | Self Organization<br>Network Dynamics | Associative Memory<br>Learning Algorithms I |
| **MONDAY, JULY 25** | Network Architectures I<br>Learning Algorithms II | Network Architectures II<br>Image Processing |
| **TUESDAY, JULY 26** | Vision<br>Neurobiological Connections | Speech Recognition & Synthesis<br>Electronic Neurocomputers |
| **WEDNESDAY, JULY 27** | Optical Neurocomputers<br>Combinatorial Optimization | Novel Applications<br>Robotics & Control |

## Plenary Sessions and Reception

**SATURDAY, JULY 23**

Wine and Cheese Reception, 6pm-8pm
Industry Panel, 8pm-10pm
*Tom Schwartz, Moderator*

**SUNDAY, JULY 24**

**Plenary Session I, 7pm-10pm**
On Neural Networks, *Marvin Minsky*
Parallel Distributed Processing,
*David Rumelhart*
Architectures for Neural Preprocessing,
*Carver Mead*

**MONDAY, JULY 25**

**Plenary Session II, 8pm-10pm**
Vistas in Optical Neurocomputing
Design, *John Caulfield*
The First Years of Neurocomputing,
*Eduardo Caianiello*

**TUESDAY, JULY 26**

Poolside Party, 6pm-8pm
Government Funding Panel,
*Ira Skurnick, DARPA, Moderator*

## Registration Fees

**Conference Registration** *(Does Not Include Tutorials)*

All prices are in US dollars and include Proceedings, unless otherwise noted.

| | |
|---|---|
| Through April 1, 1988 | $190 |
| April 1 to June 30 | $240 |
| After June 30 | $280 |
| Single day registration (Proceedings not included) | $110 |
| Full-time students (Proceedings not included) | $90 |

– A letter from the Department Head is required to verify **full-time** student status. A current student ID with photo will be required at the door.

– 20% discount for current IEEE members. Member number is required. This discount does not apply to student registration or tutorials.

Conference Registration Fee includes admission to all sessions, exhibit area, Saturday Welcome Reception, Tuesday evening poolside party.

**Tutorial Registration** *Only registered Conference participants may register for the tutorials.*

| Each Tutorial | $125 | Four Tutorials | $450 |
|---|---|---|---|

Make check payable to IEEE ICNN 88. ALL FOREIGN PAYMENTS MUST BE MADE BY DRAFT ON A US BANK IN US DOLLARS. CREDIT CARDS NOT ACCEPTED.

## Hotel Reservation
Deadline: June 23, 1988

Make checks payable and mail to:
Sheraton Harbor Island East
1380 Harbor Island Drive
San Diego, CA 92101

☐ Single Room $100/night (US dollars)
☐ Double Room $100/night (US dollars)

Name_____

Sharing with
(If applicable)_____

Organization_____

Address_____

City_____

State_____ Zip_____

Arrival Date_____ Time_____
(Check in time is 2:00 pm)

Departure Date_____
(Check out time is noon)

Reservations will be held until 3:00 pm on
arrival date unless guaranteed by

AX     DC     CB     VISA     MC

Card No._____

Expiration Date_____

Enclose deposit of ONE NIGHT'S rate
plus 7% tax.

## Conference & Tutorial Registration

| CONFERENCE REGISTRATION | NON-MEMBER | IEEE MEMBER (20% Discount) Member No. _____ |
|---|---|---|
| | (US dollars) | (US dollars) |
| Through April 1, 1988 | $190_____ | $152_____ |
| April 1-June 30 | $240_____ | $192_____ |
| July 1-27 | $280_____ | $224_____ |
| †One Day Registration Sun. Mon. Tues. Wed. (Please circle one) | $110_____ | $88_____ |
| †*Student | $90_____ | $90_____ |
| CHECK ENCLOSED | $_____ | $_____ |

*Students must submit a letter from their academic department verifying full-time student status and must present current student I.D. card at the door.

†Proceedings not included.

Forms may be duplicated for additional registrants.

Last Name_____

First Name/
Middle Initial_____  (Please circle one) Dr. Mr. Ms.

Affiliation_____

Preferred Mailing Address:   ☐ Business   ☐ Home

Address_____

_____

City_____ State_____

Zip_____ Country_____

Telephone: Office ( )_____ Home ( )_____

### TUTORIAL REGISTRATION (Optional)

| | |
|---|---|
| One Tutorial | $125_____ |
| Two Tutorials | $250_____ |
| Three Tutorials | $375_____ |
| Four Tutorials | $450_____ |
| CHECK ENCLOSED | $_____ |
| GRAND TOTAL ENCLOSED (Conference & Tutorials) | $_____ |

List your tutorials by numbers (refer to tutorial list). Maximum 4 tutorials. Cost: $125 (US dollars) each tutorial, $450 (US dollars) 4 tutorials.

In order of priority, highest → lowest

| 1st Choice | | | | |
|---|---|---|---|---|
| Alternate | | | | |

Make check payable
and mail to:
IEEE ICNN 88
Nomi Feldman
3770 Tansy Street
San Diego, CA 92121

ALL FOREIGN
PAYMENTS MUST
BE MADE BY
DRAFT ON A U.S.
BANK IN U.S.
DOLLARS
CREDIT CARDS
NOT ACCEPTED

### Accommodations

The Conference will be held at the Sheraton Harbor Island East Hotel. A limited number of rooms with special rates are being held for our group until June 23, 1988. Please reserve early.
  Sheraton Harbor Island East Hotel
  1380 Harbor Island Drive
  San Diego, CA 92101
  (619) 692-2265
The Sheraton Harbor Island East Hotel is located on spectacular Harbor Island in San Diego Bay—only minutes from the airport and downtown San Diego, yet in the heart of the resort area. Complimentary transportation to and from the airport is available. The hotel has a private beach, playground facilities, sailing, two fresh water pools, tennis courts and putting green.

### Social Activities

Sightseeing tours in and around San Diego will be offered. Details and registration forms will be sent out upon registration for the Conference.

### Messages

If you need to be reached during the conference, the number to call is:
(619) 291-2900 and ask for Neural Networks Conference.

### Cancellation

If your registration must be cancelled, your fee less $30 (US dollars) for administrative costs will be refunded if we are notified in writing 3 weeks in advance of the Conference. No refunds can be given after the Conference begins.

### Airline Transportation

You can save 40% and more...however, you must make your reservations early! American Airlines will guarantee an exclusive IEEE ICNN Meeting Saver Fare:

  40% discount on full coach fare if ticket is purchased up to 7 days in advance

  Reservations MUST be made early

  In addition, 5% discount off ANY applicable published fare for which you qualify, including Super Saver, first class, etc.

Please note: There is a $30 cancellation charge on the Meeting Saver Fare, after ticketing.

You must reserve through American's Meeting Services Desk. This offer is valid for travel on American segments only from July 21-July 29, 1988.

Be sure to give your STAR FILE NO.
S73774
Please call: 1 (800) 433-1790

### Further Information

For further information regarding registration write to:
  Nomi Feldman
  Conference Coordinator
  3770 Tansy Street
  San Diego, CA 92121
  Telephone (619) 453-6222

# UNIVERSITY OF WASHINGTON
## SEATTLE, WASHINGTON

*Interactive Systems Design Laboratory*
*Department of Electrical Engineering, FT-10*
*Telephone: (206) 543-6990, 543-6061 or 543-2150*
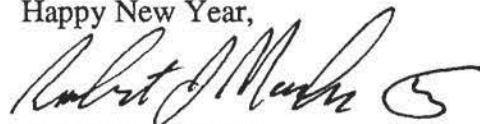*FAX: (206) 543-3842; marks@blake.acs.washington.edu*

December 27, 1988

Dear IEEE Neural Network Committee Members:

A number of items are attached:

PINK: The proposal you were sent under separate cover concerning the ICNN-INNS merger has been approved by majority vote of the NNC committee. A copy of my letter to Bernie Widrow, INNS Chair, is attached. Thanks to Nick DeClaris and his Negotiating Subcommittee for a fine and speedy job. This five-member committee will continue as the five members representing the NNC on the IJCNN Oversight Committee for IJCNN '89.

BLUE: Action items for our D.C. meeting with the NNC minutes from the NIPS conference are also attached. Note that the IEEE Engineering Management Society is petitioning for NNC membership.

GREEN: According to the NNC charter, member societies are to review proposed conference budgets two months prior to NNC voting. I have drafted a letter to member Society Presidents and have sent them the budget and conference plan. This is the green attachment. Please note that this document is IEEE proprietary.

YELLOW: The NNC Publications Subcommittee has drafted a letter to the member Society Presidents concerning an IEEE Neural Networks Transaction. A copy is attached in green. A more detailed proposal is being crafted and will be sent to you soon for your comments. Any comments to the Subcommittee members (see attachment) are most welcome.

Happy New Year,

Robert J. Marks II
NNC President pro tem

RJM:cc

Attachments

cc: Dr. Paul A. Willis, IEEE Engineering Management Society, President
Mike Aronstein, San Diego Section

# UNIVERSITY OF WASHINGTON
## SEATTLE, WASHINGTON

*Interactive Systems Design Laboratory*
*Department of Electrical Engineering, FT-10*
*Telephone: (206) 543-6990, 543-6061 or 543-2150*
*FAX: (206) 543-3842; marks@blake.acs.washington.edu*

December 22, 1988

Prof. Bernard Widrow, Chair
International Neural Network Society
Department of Electrical Engineering
Stanford University
Stanford, CA 94305

Dear Bernie:

I am delighted to inform you that the proposal for the merger of the INNS and ICNN conferences has been approved by a majority vote of the IEEE Neural Networks Committee (NNC). Inherent in this agreement is the understanding that the Charter of the NNC and all guidelines of IEEE concerning such activities be adhered to. A copy of our Charter is attached.

We in the NNC look forward to a long, fruitful and mutually beneficial relationship with the INNS.

Best regards,

Robert J. Marks II
NNC Chairman pro tem

RJM:cc

Attachment

cc: NNC Members

Charter of the IEEE Neural Networks Committee (NNC)

Agreement Among the Participating Societies Regarding IEEE Activities in Neural Networks.

## SCOPE

The IEEE Neural Networks Committee is a committee of the IEEE Technical Activities Board consisting of IEEE Societies whose purpose is to coordinate technical activities in the interdisciplinary area of Neural Networks and provide the focus for cooperative efforts among TAB entities. The following Societies shall jointly sponsor the IEEE Neural Networks Committee, hereafter referred to as the Committee or NNC:

Acoustics, Speech, and Signal Processing Society

Circuits and Systems Society

Communications Society

Computer Society

Control Systems Society

Engineering in Medicine and Biology Society

Industrial Electronics Society

Information Theory Group

Laser and Electro-Optics Society

Systems, Man, and Cybernetics Society

The IEEE Neural Networks Committee shall act to foster activities in the area of Neural Networks by forming technical subcommittees, task forces, interest groups, and sponsoring technical workshops, symposia and international conferences. The NNC shall represent the IEEE Technical Activities Board in matters relating to Neural Networks.

## THE COMMITTEE

The membership of the NNC shall consist of two delegates from each of the sponsoring Societies. These delegates must be appointed by their respective Societies for two-year staggered terms, and may be reappointed. Each sponsoring organization shall have one equal vote on matters before the NNC.

The committee shall elect biennially a Chairman from among its current membership. The Chairman shall serve as focus for all communications and shall direct, on behalf of

the NNC, the operational matters of the committee. For the duration of the office of Chairman, that individual will not be considered to be a representative of his/her respective Society, therefore able to represent more freely the overall objectives of the NNC. The Chairman's Society will be represented by the other delegate only. On a biennial basis, the NNC shall also elect a Secretary and a Treasurer. In addition to the usual duties regarding minutes, reports, records, etc., the Secretary shall serve as Chairman pro tem in the absence of the Chairman. When the election to office of a Committee member requires an extension of the member's term of appointment by the sponsoring Society, it is expected that such an extension will take place. This extension will be for either one or two years as necessary, to maintain the staggered appointment with the other delegate.

## IMPLEMENTATION

This agreement shall be acted upon by the President of each sponsoring Society on behalf of the respective Administrative Committee or Board of Governors. Should any choose not to participate in this agreement, it is understood that their allocated positions on the NNC AdCom and their participation in sponsoring or funding of its activities shall be voided. The letter will be a binding agreement upon the parties when approved by their respective administrative committees and approved by the appropriate IEEE board(s). The original of this letter and of signed letters of transmittal indicating sponsorship agreement from the respective IEEE Societies will become a part of TAB records.

Once the NNC has been established, other IEEE Societies can petition to become members of the Committee. Such Societies must demonstrate that they have been active in the area of Neural Networks in the last two years. A two thirds majority vote is required by the NNC for admission of new members.

A Society can indicate its intent to withdraw from the NNC at any time. However, the withdrawing Society shall continue to be financially responsible for its share of future NNC activities which have been approved by the NNC prior to the date of withdrawal. If a Society withdraws from the NNC, its share in future NNC activities is divided equally among the remaining members.

## FINANCIAL MATTERS

All member Societies share equally in the financial responsibilities of the NNC. Budgets requiring NNC approval shall be submitted to the sponsoring Societies at least sixty days in advance of the NNC vote, so that the sponsoring Societies can instruct their representatives accordingly. Budgets will be approved by majority vote of the committee.

The NNC shall be authorized to establish a reserve fund from which it can maintain its own operations. The fund shall be used to make cash advances to conferences sponsored by the NNC and to support the operating expenses of the Committee. The level of this reserve shall be 50% of the approved operating budget (including conference commitments) for the last year's operations. All monies above this level will be

distributed to the sponsoring Societies on an equal basis at the close of the IEEE fiscal year.


## AMENDMENTS

Changes in the procedures specified in this letter will be enacted by amendments to be approved by a two thirds majority of the sponsoring Societies.


Date _____          Agreed by


                                      _____
                                      (Name)

                                      _____
                                      (Office)

                                      _____
                                      (Society)


---

1. The Computer Society has apparently chosen not to participate in the NNC (12/21/88, Robert J. Marks II, NNC Chairman pro tem).

Action items for the NNC meeting at IJCNN '89 in Washington, D.C.

- NNC Membership for Engineering Management Society

- Election of next NNC Chair - Nominating Committee

- ICNN-INNS Merger Status

- NNC Publications Committee Report

- Financial Reports

- Future meeting status reports

- Other

## Minutes of the IEEE Neural Network Committee

Attendance. (Those marked * are NNC members or were appointed representative of their member societies by an absent NNC member. Only NNC members were eligible to vote on motions.)

| Member Society or other | Name | Phone | Computer Mail |
|---|---|---|---|
| IE | Fernando Aldana* (for Okabe) | 34-1-2343709 | |
| San Diego Section | Mike Aronstein | | |
| COM | Kesh Bakhru* | (619) 277-6780 X2648 | |
| SMC | Nick DeClaris* | (202) 357-7955 and/or (301) 328-7866 | cuellar%umbc.dec net@umbc2.umd. edu |
| ICNN '89 Comm | Russ Eberhart | (301) 953-5037 | |
| IT | A. Ephremides* (for Mustafa) | (301) 454-6871 | |
| LEO | K. M. Johnson* | (303) 492-1835 | |
| CAS | R. J. Marks* | (206) 543-6990 | marks@blake.acs. washington.edu |
| IE | H. T. Nagle* | (919) 737-3578 | |
| IT | E. C. Posner* | (818) 356-4852 | |
| R.A. | Wesley Snyder* | (919) 737-2336 | wes@ecelet.ncsu. edu |
| IEEE EAB ICNN '89 Tutorials | R. A. Stampfl | (201) 562-5483 | |
| INNS/ICNN Merger Comm | Al Stubberud | (714) 856-7092 | |

-- The meeting was called to order at 8 P.M. local time at the Sheraton Denver Tech Center on November 28, 1988 by Troy Nagle.

-- Al Stubberud reported on the results of his discussions with INNS concerning conference coordination. The following motion was made, seconded and, after some discussion, was passed:

> "The NNC chair will appoint a committee to further pursue dialog with INNS using conditions 1 through 9 (on attachment #1) as a basis of negotiation."

- Al Stubberud noted that the INNS Board of Directors had unanimously accepted these conditions.

- Nagle noted that any final agreement with INNS must be consistent with IEEE regulations.

- Nagle appointed the following INNS Negotiation Committee Members:

  * Fernando Aldana
  * Wesley E. Snyder
  * Nicholas DeClaris
  * Edward C. Posner
  * Kristina Johnson

-- Aronstein presented the preliminary financial status report on ICNN '88 shown in attachment #2. He noted that bills were still coming in.

-- Due to his recently being elected 1989 IEEE Vice President for Technical Activities, Troy Nagle is no longer eligible to be Chair of the NNC. Nagle appointed a three-member Chairman Nominating Committee:

- Ed Posner
- Anthony Ephremides
- H. Troy Nagle

The Committee will collect nominations from the NNC (including themselves). An election will be held at the next NNC meeting. The election will be conducted by Chairman Pro Tem, Bob Marks. (The NNC Secretary assumes this title if the Chair resigns.)

-- Wes Snyder reported on the status of ICNN '89. Some delays have resulted from the uncertainty of INNS participation. There is as of yet no proposed budget, although preliminary operating capital has been made available. Over 4,000 calls for paper requests were mailed in November.

-- Ed Posner reported that Richard Lippmann has organized the EAB satellite program on neural networks (to be broadcast September 27, 1989).

-- The following motion was made, seconded and passed unanimously:

> "The NNC authorizes expenditures of up to $4,000 of its funds to financially assist the IEEE Educational Activities Board in the video taping of the tutorials at ICNN '89."

-- A discussion of the possible establishment of a neural network speakers service was deferred.

-- A two-page proposal for an IEEE Neural Network journal, prepared by Herb Rauch, was presented to the NNC. (See attachment #3.) A committee was appointed by Nagle to investigate possible NNC sponsored publications. Nagel appointed the following NNC Publication Committee members:

- Bob Marks, Chair
- Bob Newcomb
- Evangelia Tzanakou
- Herb Rauch

-- The next NNC meeting was tentatively scheduled on Wednesday, June 21, 1989 at ICNN '89 in Washington, D.C.

-- The meeting was adjourned at 10:01 P.M. by Nagle.

Robert J. Marks II
NNC Secretary

# UNIVERSITY OF WASHINGTON
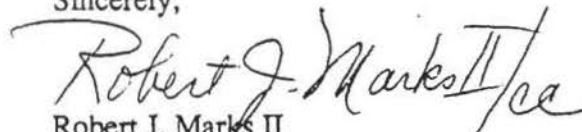## SEATTLE, WASHINGTON

*Interactive Systems Design Laboratory*
*Department of Electrical Engineering, FT-10*
*Telephone: (206) 543-6990, 543-6061 or 543-2150*
*FAX: (206) 543-3842; marks@blake.acs.washington.edu*

December 21, 1988

TO: IEEE Neural Network Committee (NNC) Member Society Presidents

In accordance with the NNC Charter, the attached budget and conference plan is submitted to you for the comments of your Society. The NNC has recently agreed to jointly sponsor conferences with the International Neural Networks Society (INNS). Since this merger was officially sanctioned by the NNC in late December, this budget submission to you is somewhat tardy. In good faith, the NNC will follow this budget proposal prior to its official adoption only when expenditures are required or timely.

Sincerely,

Robert J. Marks II
NNC Chairman pro tem

RJM:cc

Attachments

cc: NNC Members
Dr. Paul A. Willis, IEEE Engineering Management Society President

IEEE TECHNICAL ACTIVITIES
## IEEE CONFERENCE INFORMATION SCHEDULE

See reverse side for instructions on how to complete this form

### CONFERENCE

1. Full title of Conference __International Joint Conference on Neural Networks__

2. Dates of Conference __June 18-22, 1989__

3. Location of Conference (full name and address) __Washington Sheraton, Washington DC__

4. Estimated Attendance __2000__     5. Exhibits  ☒ Yes     ☐ No

6. Will there be a Conference publication?  ☒ Yes   ☐ No   If yes, check one box below.
   ☒ Conference Record          ☐ Other (explain) _____

### IEEE ENTITY INVOLVEMENT

7. If IEEE entity involvement is either Sponsorship or Cosponsorship as defined on reverse side, enter below the name of all involved IEEE and non-IEEE entities and their percent of financial share.

   Entity __IEEE Neural Networks Committee__    % __40__
   Entity __IEEE Washington Section__    % __10__
   Entity __International Neural Networks Society__    % __50__
   Entity _____    % _____

8. If IEEE entity involvement is either Participating or Cooperating as defined on reverse side, enter below the names of all involved IEEE and non-IEEE entities and indicate the involvement of each.

|  | Type of Involvement | |
|---|---|---|
|  | Participating | Cooperating |
| Entity _____ | ☐ | ☐ |
| Entity _____ | ☐ | ☐ |
| Entity _____ | ☐ | ☐ |
| Entity _____ | ☐ | ☐ |

9. Has the Section within whose geographical boundaries the Conference is being held been notified?  ☒ Yes ☐ No
   If yes, who was contacted? __Russell Eberhart__          __Washington__
                     Name          Section

10. Has IEEE Conference Insurance form been submitted?  ☒ Yes   ☐ No

### ADMINISTRATION

For the following Conference officers, enter first name, middle initial and last name, plus complete address and telephone number.

CONFERENCE CHAIRMAN __Wesley E. Snyder__    Tel. No. ( 919) __737-2336__
Address _____

INFORMATION CONTACT __Nomi Feldman__    Tel. No. (619 ) __453-6222__
Address __3770 Tansy Street San Diego CA 92121__

COMMITTEE MEMBERS
If available, please attach to this form a complete list of Conference Committee members, their titles, addresses and telephone numbers.

SUBMITTED BY:
Name __Wesley Snyder__    Tel. No. ( 919) __737-2336__
Address __Dept. of Electrical and Computer Engineering NCSU Raleigh, NC 27607__
Conference Position __Co-chair__

SIGNATURE _____    Date _____

Figure 3.3.1B  IEEE CONFERENCE INFORMATION SCHEDULE, form front

# IEEE TECHNICAL ACTIVITIES
## IEEE CONFERENCE SERVICES DEPARTMENT
## CONFERENCE PUBLICATION FORM

See reverse side for instructions on how to complete this form

<u>PLEASE NOTE:</u> THIS INFORMATION IS REQUIRED IN ORDER TO ESTABLISH A PAYMENT TO THE CONFERENCE FOR POST CONFERENCE PUBLICATION SALES.

Parts A and B should be completed by the Conference Chairman or designee and returned six (6) months prio to the conference to: IEEE CONFERENCE SERVICES, 345 E. 47th STREET, NEW YORK, NY 10017-2394.

**Part A — CONFERENCE PUBLICATION**

1. Full title of Conference __International Joint Conference on Neural Networks__
2. Dates of Conference __June 18-21, 1989__
3. Location of Conference (full name and address) __Washington Sheraton, Washington DC__
4. Full name of publication as it will appear on title page __Proceedings of the 1989 International Joint Conference on Neural Networks__
5. Scheduled date of publication __May, 1989__
6. Estimated shipping date to IEEE __June 1989__
7. Estimated pages __1200__
8. Page size __8½ x 11__
9. Volumes __2__
10. Copyright: IEEE __x__  Other _____
11. If other, name and address of entity that owns copyright _____

**Part B — PRINTER/SHIPPING**

1. Name and address of printer __To be determined__
2. (Area Code) Telephone No. _____
3. Contact person _____
4. IEEE PAYMENT FOR CONFERENCE PUBLICATION SHOULD BE SENT TO:
Name: _____
_____
_____
5. Conference Chairman or Designee _____
Title _____
6. Address _____ (Area Code) Telephone No. _____
_____
7. Date _____
8. Signature _____

**TO BE COMPLETED BY IEEE - DO NOT COMPLETE - INTERNAL USE ONLY**

1. LC Cat. No. _____
2. IEEE Cat. No. _____
ISSN _____
4. Actual Shipping Date _____
5. Actual pages _____
6. Cost per copy _____
7. Copies ordered _____
8. Copies Rec'd _____
9. Total Cost _____
10. Bindery name and address _____
_____
11. (Area Code) Telephone No. _____
12. Contact person _____

Keep a copy for your records

Figure 5.1.3B    CONFERENCE PUBLICATION FORM

# IEEE TECHNICAL ACTIVITIES
## SUMMARY FINANCIAL REPORT FOR IEEE SPONSORED OR COSPONSORED CONFERENCES

See reverse side for instructions on how to complete this form

### CONFERENCE

1. Full title of Conference __International Joint Conference on Neural Networks__

2. Dates of Conference __June 18-21, 1989__

3. Location of Conference (full name and address) __Washington Sheraton, Washington DC__

## TYPE OF REPORT / CURRENCY USED

4. Indicate type of report by checking one box:
   - [X] Budget
   - [ ] Interim Report
   - [ ] Final Report

5. All income and expense figures below must be in U.S. Dollars. For Conferences held outside the U.S.A., indicate here the local currency (e.g., Swiss Francs) and the conversion rate used (local currency units per 1 U.S. Dollar) and date.

Local currency: _____ Conversion rate: _____ Date of conversion rate: _____

### INCOME

| | Budget | Interim Report | Final Report |
|---|---|---|---|
| 6. Registration Fees (see attached budget) | $ | $ | $ |
| 7. Conference Publication Sales | | | |
| 8. Exhibits | | | |
| 9. Social Functions | | | |
| 10. All Other Conference Receipts | | | |
| 11. Total Conference Income | | | |
| 12. Advance Loans | | | |
| 13. Total Receipts | $ | $ | $ |

### EXPENSE

| | Budget | Interim Report | Final Report |
|---|---|---|---|
| 14. Promotion | $ | $ | $ |
| 15. Conference Publications | | | |
| 16. Exhibits | | | |
| 17. Social Functions | | | |
| 18. Administration | | | |
| 19. All Other Conference Expenses | | | |
| 20. Total Conference Expense | | | |
| 21. Loan Repayments | | | |
| 22. Total Outlays | $ | $ | $ |

## SURPLUS / (LOSS)

23. Total Receipts (13) $ __684,378__   24. Total Outlays (22) $ __587,150__

25. Surplus (Loss) — (Item 23 less Item 24) $ __97,228__

## POST CONFERENCE DISTRIBUTION   Surplus (Loss) in Item 25 to be distributed as follows:

| Cosponsor Entity | % Share | $ Distributed |
|---|---|---|
| a. IEEE Neural Networks Committee | 40 | |
| b. IEEE Washington Section | 10 | |
| c. International Neural Network Society | 50 | |
| d. | | |
| | Surplus (Loss) $ | |

## CONFERENCE FINANCIAL INSTITUTION

Name of Bank __to be determined__

Address _____

Conference Account Title _____   Account No. _____

Have you requested IEEE Conference Insurance?   [ ] Yes   [ ] No

## SUBMITTED BY:

Name __Wesley E. Snyder__   Tel. No. (919) __737-2336__

Address __Department of Electrical and Computer Engineering, NCSU Raleigh NC 27607__

Conference Position __Co-chair__

SIGNATURE _____   Date _____

## INCOME

| REGISTRATION FEES | Quantity | | Fee | Total |
|---|---|---|---|---|
| one day member | 26 | | $88.00 | $2288.00 |
| student member | 120 | | $50.00 | $6000.00 |
| student nonmember | 74 | | $75.00 | $5550.00 |
| one day nonmember | 35 | | $110.00 | $3850.00 |
| member early advance | 200 | | $152.00 | $30400.00 |
| nonmember early advance | 185 | | $190.00 | $35150.00 |
| member advance | 470 | | $192.00 | $90240.00 |
| Misc. | 0 | | 0 | $0.00 |
| nonmember advance | 190 | | $240.00 | $45600.00 |
| member at conf | 400 | | $224.00 | $89600.00 |
| nonmember at conf | 300 | | $280.00 | $84000.00 |
| freebees | 0 | | $0.00 | $0.00 |
| Total registrants | 2000 | Subtotal | | $392678.00 |

| CONFERENCE PUB SALES | | | | |
|---|---|---|---|---|
| To members | 200 | | $75.00 | $15000.00 |
| To nonmembers | 50 | | $150.00 | $7500.00 |
| To IEEE | 50 | | $40.00 | $2000.00 |
| Total copies | 250 | Subtotal | | $24500.00 |

| EXHIBITS | | | | |
|---|---|---|---|---|
| Booths | 50 | | $900.00 | $45000.00 |

| OTHER | | | | |
|---|---|---|---|---|
| Interest | | | | $900.00 |
| Page charges | | | | $1300.00 |
| Advance from icnn88 | | | | $40000.00 |
| Subtotal | | | | $42200.00 |

| | | | | |
|---|---|---|---|---|
| TOTAL INCOME | | | | $504378.00 |

## EXPENSES

| PROMOTION | | Budget |
|---|---|---|
| Printing/call for papers | | $1700.00 |
| Printing/advance program | | $24000.00 |
| Mics. | | $0.00 |
| Printing/final program | | $13000.00 |
| Mailing lists/labels | | $6400.00 |
| Postage and mailing | | $14000.00 |
| Other (Ads) | | $8000.00 |
| Attendee packet | | $12000.00 |
| | TOTAL | $79100.00 |

| CONFERENCE PUBLICATION | | |
|---|---|---|
| Conference record printing | | $70000.00 |
| Author kit printing | | $3000.00 |
| Shipping | | $0.00 |
| Other | | $8000.00 |
| | TOTAL | $81000.00 |

| EXHIBITS | | $12000.00 |
|---|---|---|

2

SOCIAL FUNCTIONS
(see attachment 1)                                                  $170000.00

ADMINISTRATION
Insurance and bonding                                                  $500.00
                                                                       $500.00
Security and guards                                                   $4000.00
Projection equip                                                      $8000.00
Management and secretarial                                          $16000.00
Office equipment                                                     $1500.00
Printing forms. etc.                                                 $5000.00
Posters. signs. etc.                                                 $3000.00
Telephone. etc.                                                      $3000.00
Seed money to 90 conf                                               $40000.00
Auditing                                                             $5000.00
Clerical and Finance                                                $3000.00
Local arrangements                                                  $2000.00
                                      TOTAL                         $91000.00

Committee Expenses
(See attachment 2)                                                 $21550.00

                           TOTAL EXPENSES    $454650.00

                           TOTAL REVENUE     $504373.00

CONFERENCE PROFIT                            $49728.00

3

ATTACHMENT 1
SOCIAL FUNCTIONS

| | |
|---|---|
| Reception | $40000.00 |
| Dinner | $90000.00 |
| Coffee breaks | $40000.00 |
| | |
| TOTAL | $170000.00 |

TUTORIALS

INCOME

| | | | |
|---|---|---|---|
| Registration | 1500 | 120 | $180000 |

EXPENSES

| | | | |
|---|---|---|---|
| Speaker fees | 13 | 6000 | $78000 |
| Fees for large classes | | | $20000 |
| Video taping(to EAB) | | | $4000 |
| Audio-visual | | | $2500 |
| Other (signs,etc) | | | $6000 |
| Printing | | | $10000 |
| Tutorial committee | | | $2000 |
| Refreshments | | | $10000 |
| TOTAL | | | $132500 |

ATTACHMENT 2
COMMITTEE EXPENSES

| | |
|---|---|
| Amari travel | $3600.00 |
| Eckmiller travel | $2800.00 |
| Stubberud | $3600.00 |
| Snyder | $3600.00 |
| Hecht-Nielsen | $1500.00 |
| Glaser | $1150.00 |
| Hopfield | $1150.00 |
| Sejnowski | $1150.00 |
| Werbos | $200.00 |
| | |
| TOTAL | $18750.00 |

| | |
|---|---|
| TUTORIALS PROFIT | $47500 |

4

# IEEE PROPRIETARY - DO NOT DISTRIBUTE

## IEEE IJCNN-89

## CONFERENCE PLAN

VERSION B
15 November 1988

--------------------------------------------------------------------

CONTENTS

1. Overview

2. Technical Program

3. Charter

4. Budget

--------------------------------------------------------------------

## 1. Overview

IJCNN-89 will be the world's premier conference on neurocomputing in 1989. *Neurocomputing* is the second fundamental information processing paradigm. It is a new alternative to the *programmed computing* paradigm that has dominated all automated information processing since the invention of the electronic digital computer in the 1940's. Neurocomputing is based upon highly parallel distributed computing structures called *neural networks* which become capable of carrying out useful information processing transformations by means of self-adjustment in response to *training* data.

Neurocomputing is based upon *transformations;* whereas programmed computing is based upon *algorithms*. This makes neurocomputing technically quite different from ordinary programmed computing. For example, two of the primary focuses of programmed computing are algorithms and software. In neurocomputing the corresponding areas are neural network architectures and neurosoftware. However, for all their differences, neurocomputing and programmed computing share a great many common technological elements. For example, neurocomputer hardware and embedded software are very similar to those found in programmed computers. *Neurocomputers* (processors that are especially suited for implementing neural networks) attach to standard host computers as coprocessors (using standard digital interfaces) and neural networks are called from host computer software as if they were subroutines or procedures. Thus, while neurocomputing has some new elements, it fits neatly into the existing computer industry infrastructure.

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At the present time neurocomputing is a comparatively weak technology. The known neural network architectures (approximately 50 types are known, of which about 14 are in common use) have only limited information processing capabilities and each has significant known limitations. Because of this, only a few practical information processing problems can be successfully addressed at the present time. Problems in certain areas of sensor processing, data analysis, control, and knowledge processing seem to be the most amenable to solution with current neurocomputing capabilities. Fortunately, some of the problems in this limited set are of interest to large numbers of engineers and have significant economic importance.

Notwithstanding its current limitations, interest in neurocomputing has grown explosively over the last two years. Unlike Artificial Intelligence, which has still not found a large end-use market, neurocomputing looks as if it will have a number of near term end-use applications. A recent survey by *Intelligence* newsletter found 157 companies in the United States seriously pursuing major neurocomputing-based products and applications. Many more are exploring the use of neurocomputing as a tool for solving some of their information processing problems. This activity does not stop at the U.S. border. Several companies in Japan and Europe are also exploring applications of neurocomputing, as are the military services of both the U.S. and the U.S.S.R. At least 20 companies dedicated to supplying neurocomputers and related products and services have been founded within the last 18 months. The first IEEE International Conference on Neural Networks (IEEE ICNN-87), which was held in San Diego in June of 1987, had a total attendance in excess of 1,600; which made it larger than IEEE ICASSP and several other important IEEE conferences. The second IEEE International Conference on Neural Networks (held in San Diego in July of 1988) also attracted upwards of 1,600 participants, despite a large competing conference held by the International Neural Network Society six weeks later in Boston, Mass., which had about 1,200 participants (and 500 students). As 1989 begins, activity in neurocomputing continues to grow.

IJCNN-89 is the third installment in a conference series devoted to the technology of neurocomputing in its academic, industrial, commercial, consumer, military, and biomedical engineering aspects. The series is sponsored by the IEEE Technical Activities Board Neural Network Committee (NNC), and the International Neural Network Society IEEE Technical Societies participate in the meeting via membership in the NNC. The following Societies are affiliated with NNC:

- Acoustics, Speech, and Signal Processing Society
- Circuits and Systems Society
- Communications Society
- Control Systems Society
- Engineering in Medicine and Biology Society
- Industrial Electronics Society
- Information Theory Society
- Lasers and Electro-Optics Society
- Robotics and Automation Society
- Systems, Man, and Cybernetics Society

Non-IEEE Technical Societies participate in the meeting via association with the NNC. Local IEEE Sections participate in the meeting as both local hosts of the meeting and as cosponsors.

IJCNN-89 will be held in Washington, D. C. on Monday, 19 June through Thursday,

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22 June 1989. Tutorials will be held on Sunday, 18 June, 1989.     IJCNN-89 expected to attract over 2,000 attendees, which will make it one of IEEE's largest conferences. The emphasis in this year's conference will be to fix the minor problems identified with IEEE ICNN-88, to run a highly successful . IJCNN-89 ' (both technically and financially), and to firmly establish the NNC as a long-term, stable, technical coalition of IEEE Sections and Societies that can successfully organize and run future conferences in the series in a consistent manner.

## 2. Conference Organization

IJCNN-89 is being organized by the following committees:

1. IJCNN-89 Steering Committee:

   - Allen R. Stubberud (Co-chair)
   - Wesley E. Snyder (Co-chair)
   - Robert Hecht-Nielsen (Program Chair)
   - Nomi Feldman (Conference Coordinator)

2. IJCNN-89 Conference Committee

   - Conference Chair (honorary position) Shun-Ichi Amari, University of Tokyo, JAPAN
   - International Chair (honorary position) Rolf Eckmiller, University of Dusseldorf, WEST GERMANY
   - Allen Stubberud, Co-Chair
   - Wesley Snyder, Co-Chair
   - Nicholas DeClaris, Finance
   - TBD Hospitality
   - Robert Hecht-Nielsen, Program
   - Herb Rauch, Publicity
   - Yuishe Okabe, International publicity
   - TBD Local Arrangements
   - Bill Porto, Exhibits
   - Paul Werbos, Tutorials
   - Russ Eberhart, Posters
   - Carol Bonomo, Publications

3. IJCNN-89 Program Committee

   - Robert Hecht-Nielsen, Chair

- Shunichi Amari, Tokyo University
- Rold Eckmiller, University of Dusseldorf
- Allen Stubberud, University of California, Irvine

4. Publications Committee

    - Carol Bonomo, Chair
    - Robert Newcomb

5. Publicity Committee

    - Herb Rauch, Chair
    - Yuishe Okabe
    - Robert Marks
    - Kristina Johnson

6. Finance Committee

    - Nicholas DeClaris, Chair
    - Mike Aronstein

7. Exhibits Committee

    - Bill Porto, Chair
    - TBD

8. Hospitality Committee

    - TBD

9. Local Arrangements Committee

    - TBD, Chair

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### 3. Technical Program (TENTATIVE)

NOTE: This Program is currently IEEE PROPRIETARY. Details can be released only with explicit permission of IEEE ICNN-89 Organizing Committee Chair Allen Stubberud and Technical Program Chair Robert Hecht-Nielsen. There must be no leakage of information while the current negotiations are still underway. The next version of this document shall contain a Technical Program that is approved for unlimited distribution.

NOTE: Functions/names marked with X mean that the named person has committed to participate in the indicated manner. All other names are tentative and may be changed if the initially selected person cannot participate.

The Conference Technical Program consists of Tutorials, Technical Sessions, Plenary Sessions, and a Reception. These are now described:

Tutorials (to be given at the Sheraton Washington on Sunday 18 June, 1989)

Notes: • Each tutorial offering shall last two hours.
 • Each tutorial offering shall be limited to a maximum of 100 participants.
 • Tutorials will be offered once, twice, or three times, depending on demand.

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- Four two-hour tutorial time slots will be used to allow participants to arrange as many combinations as possible.

1. David Casasent     Pattern Recognition Review - X
2. Leon Cooper     Adaptive Pattern Recognition -PENDING
3. John Daugman     Vision - X
4. Walter Freeman     Neurobiology Review - X
5. Stephen Grossberg     Adaptive Sensory Processing - X
6. Morris Hirsch     Dynamical Systems Review - X
7. John Hopfield     Neural Networks and Molecular Computing- PENDING
8. Lawrence Jackel     VLSI Technology and Neural Network Chips - PENDING
9. Teuvo Kohonen     Self-Organizing Feature Maps - X
10. Bart Kosko     Associative Memory - X
11. Demetri Psaltis     Optical Neurocomputers- X
12. Peter Wallace     Starting a High-Tech Company - PENDING
13. Bernard Widrow     LMS Techniques in Neural Networks - X
14. Ron Williams     Reinforcement Learning - X

Technical Sessions (to be held Monday 19 June through Thursday 22 June, 1989)

(NOTE: Each Session lasts 4 hours; Session Chairs' names are listed)

## MONDAY

### Monday, June 19, 1989

Morning Session:
- Associative Memory     James Anderson - X
    Bart Kosko - X

- Image Analysis     David Casasent - X
    John Daugman - X

Afternoon Session:
- Neural Network Architectures & Theory I     Shun-Ichi Amari - X
    Michael Arbib - PENDING

- Applications I     Lee Giles - PENDING

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Allen Stubberud - X

## Tuesday, June 20, 1989

Morning Session:

| | |
|---|---|
| • Neural Network Architectures & Theory II | Morris Hirsch - X<br>Christoph von der Malsburg - PENDING |
| • Embedding Field Theory | Stephen Grossberg - X<br>Gail Carpenter - X |

(NOTE: INVITED PAPERS ONLY IN THIS SPECIAL SESSION)

Afternoon Session:

| | |
|---|---|
| • Reinforcement Learning | Harry Klopf - X<br>Ronald Williams - X |
| • Applications II | Charles Elbaum - X<br>Robert Hecht-Nielsen - X |

## Wednesday, June 21, 1989

Morning Session:

| | |
|---|---|
| • Electronic Neurocomputers | Dan Hammerstrom - X<br>Larry Jackel - PENDING<br>S. Y. Kung - PENDING |
| • Neurobiological Models | V. I. Kryukov - X<br>Andres Pellionez - X |

Afternoon Session:

| | |
|---|---|
| • Optical Neurocomputers | Nabil Farhat - X<br>Dana Anderson - X<br>Bernard Soffer - X |
| • Supervised Learning Theory | Geoffrey Hinton - PENDING<br>Bernard Widrow - X |

## Thursday, June 22, 1989

Morning Session:

| | |
|---|---|
| • Robotics and Control | Rolf Eckmiller - X<br>Michael Kuperstein - X |
| • Vision | Kunihiko Fukushima - X<br>Christof Koch - X |

Afternoon Session:

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# IEEE PROPRIETARY - DO NOT DISTRIBUTE

- Optimization          Stuart Geman - PENDING
                                  Scott Kirkpatrick - PENDING

- Self-Organization      Teuvo Kohonen - X
                                  David Willshaw - PENDING

---

Plenary Sessions and Reception (the evenings of Sunday 18 June, Monday 19 June, Tuesday 20 June, and Wednesday 21 June 1989)

## SUNDAY

Wine and Cheese Reception - (6pm - 8pm)
(with Automata-Synthesized Music by Teuvo Kohonen)

Industry Panel - (8pm - 10pm), TBD Moderator

## MONDAY

Plenary Session I (8pm - 10pm)

Shun-Ichi Amari
James Burke, Keynote

## TUESDAY

Plenary Session II (8pm - 10pm)

Terrence Sejnowski
Patricia Churchland

## WEDNESDAY

Poolside Party (6pm - 8pm)

Government Funding Panel - Paul Werbos, Moderator
(8pm --->)

---

## 4. Conference Charter

IEEE ICNN-89 shall be governed by the provisions of the following Charter

I. General

- The official name of the 1989 Conference shall be:      IJCNN-89

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• The Conference shall be held at the Sheraton Washington in Washington, D. C., from Sunday 18 June 1989 through Thursday 22 June 1989 in accordance with the official technical program (Section 3 of this Conference Plan document), which is hereby incorporated as part of this Charter.

• The IJCNN-89 is sponsored by the IEEE TAB Neural Network Committee (NNC), the International Neural Network Society, and other IEEE Sections (these bodies are hereafter referred to as the *sponsoring entities*).

• The Section in which the Conference is held shall be offered the opportunity to cosponsor the ICNN. Should the Section decline to accept the offer, its percentage financial participation in the Conference shall revert to the other sponsoring Sections.

• The Conference Steering Committee shall appoint the General Chair of ICNN-90 and beyond. The General Chair shall nominate the Conference Committee, the Program Chair(s), and the other Conference Operating Committee Chairs. Appointment of all Conference Committee, Program Committee, and Conference Operating Committee Chairs and members is subject to majority vote approval by the Steering Committee. The Steering Committee shall serve the function of an Advisory Board reviewing and offering guidance on the operational aspects and technical content of the Conference.

• The staging of the IJCNN-89 shall be managed by Nomi Feldman of Meeting Management, Inc., San Diego (who managed IEEE ICNN-87 and ICNN-88).

• The official technical program of the conference shall be printed and distributed to registrants at the conference registration desk. The program shall list all of the scheduled tutorials, technical presentations, and plenary talks and shall give the name and affiliation of the speakers.

• The Conference record containing the technical papers corresponding to the talks scheduled for presentation at the conference (along with other papers accepted for publication in the record by the joint actions of the Technical Program Committee and the Conference Committee) shall be distributed to registrants at the conference registration desk. This conference record shall not carry any individual's name(s), but shall be listed strictly as the .                  conference record. All papers presented at the Conference and in its record must be reviewed to assure high technical standards.

## II. Registration and Logistics

• Conference registration will be $190 before 1 March 1989, $240 between 1 March 1989 and 31 May 1989, and $280 between 1 June and 18 June 1989. One-day registration will be available at the door for $110. Exhibit hall and poster session entrance shall be free to conference registrants; others will be admitted by exhibitor ticket or $10 cash. Full time students showing school picture ID cards verifying their full-time student status (or presenting a school picture ID card and a letter from their school to verify their full-time student status) will be admitted for $90 (for any duration). Student registration shall include the proceedings. IEEE Members shall receive a 20% discount on all prices except

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one-day registration, exhibit hall registration, student registration, and tutorials.

• Each paid registrant at the conference shall have their name, mailing address, telephone number(s), and electronic mail address(es) accurately recorded in the official conference attendance list. This list shall be owned, copyrighted, and controlled by the Steering Committee. This list must be controlled in accordance with IEEE rules and procedures, as directed by the Steering Committee.

• Each paid registrant shall have an official pin-on or clip-on Conference Badge prepared for them at the registration counter. This badge shall have a border that is color coded to indicate: the day of registration for one-day registration, full paid registrant status, or student registration status. The badge shall present the registrant's name, organizational affiliation, and city/state/country in large black letters on a white background.

## III. Technical and Plenary Sessions

• 16 technical sessions are planned for the Conference between Monday 17 June and Thursday 22 June. The official technical session schedule presented in Section 2 of this document is hereby adopted.

• Each of the 16 technical sessions of the conference shall be 4 hours long. A maximum of 10 papers and a minimum of 6 papers shall be presented in any one session. No individual talk in any session shall be shorter than 20 minutes. Each talk shall have a separate question and answer period of not less than 5 minutes appended to it.

• No individual will be able to present more than one talk in the technical sessions of the conference. Of all of the talks given in the technical sessions and all of the poster session papers, no individual will be listed as author or co-author of more than two. Likewise, of all of the papers presented in the conference record, no individual will be listed as author or co-author of more than two such papers.

• The Conference Chair(s), International Conference Chair(s),Plenary Session Speakers, shall have their round-trip transportation to the conference, lodging at the conference hotel, and per diem ($30 per day) paid for by the conference.

• The plenary session speakers shall be explicitly warned that they must refrain from making any insulting comments, discordant or derogatory remarks or innuendos about other members of the neurocomputing community during their talks.

## IV. Tutorials

• 14 tutorials shall be presented at the Conference on Sunday 18 June 1989. The schedule for tutorials in the official Conference Technical Program is hereby adopted.

• Each tutorial offering seat shall cost $100. Three seats shall be sold as a block for $275.

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• Each tutorial presentor shall be paid $3,500 plus $50 per person attending their tutorial offerings after the first 25, up to a maximum total of $6,000. A minimum of 25 people must register for a tutorial for it to be held.

• The IJCNN-89 Technical Program Committee Chair shall not be allowed to receive any personal compensation for giving tutorials. However, should he wish, he may donate the compensation that he would have otherwise received to any non-profit organizations of his choosing.

## V. Exhibits

### General:

The theme of this year's conference and its exhibits is the same as that of ICNN-88. It is devoted to the technology of neural computing in all its scientific, engineering, academic, commercial, private enterprise and government aspects. The conference will feature presentations and tutorials by the field's leading academic and industrial experts, and will report the latest advances and neurocomputing technology.

### Exhibit Classes:

Exhibit space will be offered in three classes: commercial (CO), academic-publisher (AP), science fair (SF). Booths for CO, AP and SF exhibits will be allocated from exhibit areas designated for these classes.

### Definitions:

1. *Commercial* exhibitors are those exhibitors who are engaged n the development or production of neural network related products with the sale of these products and profit as their chief aim.

2. *Academic* exhibitors are those from colleges and universities whose aim it is to demonstrate current research efforts related to neural networks.

3. The *publisher* exhibit category includes publishers of neural network related books, magazines and newsletters who through such media help disseminate the interest in neural network technology and related knowledge.

4. The *science fair* category includes exhibits by students and others interested in advancing neural network technology and who do not qualify to exhibit as commercial exhibitors.

### Prices and Discounts:

Prices and discounts for exhibit booths are as designated below. Discounts are provided to encourage early registration of exhibitors.

Terms: The schedule of booths fees in U. S. dollars is:

| | Regular | Discount | Deposit |
|---|---|---|---|

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| | | | |
|---|---|---|---|
| Commercial (full booth) | 950 | 800 | 200 |
| Academic-Publisher (full booth) | 550 | 400 | 100 |
| Science fair (half booth) | 200 | 150 | 50 |

The discounted fee is available on or before 1 April 1989. A deposit is required to hold each booth ordered before 1 May 1989. Full payment is required for each booth ordered by 1 June 1989.

Sales:

TBD

Special Invitation:

A special invitation will be offered to all who exhibited at the 1988 International Conference on Neural Networks. The conference will offer last year's exhibitors an exclusive opportunity to purchase exhibit space at the IEEE ICNN-89 before opening sales of space to other exhibitors. However, exhibitors must register before 1 March, 1989 to take advantage of this offer.

Reservations and Full Payment:

TBD

Exhibitor's Obligation:

All of the exhibitor's outstanding obligations to IEEE ICNN-89 must be paid before the exhibitor or any of his representatives will be allowed to exhibit. Request for booth cancellations will be considered in accordance with the contractual rules and regulations.

Cancellations:

TBD

Space Assignments:

TBD

Entry to Exhibit Area:

An exhibitor may request up to five (5) complimentary passes for exhibit staff personnel for each booth ordered. In addition, up to five (5) complimentary guest passes may be requested for each booth ordered. A fee of $10.00 will be paid by non-registrants of the conference for entry into the exhibit area.

Exhibit Hours:

TBD

Set-up of exhibits will take place on

TBD

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Dismantling of exhibits will take place on

TBD

## Poster Sessions:

An estimated 100 poster sessions will be held during the four day conference. The actual number of sessions, their selection, and scheduling will be determined by the conference program chairman.

## The Lounge:

TBD

## Publicity and Exhibitor Solicitation:

TBD

## Conference Records:

TBD

## Contractors:

A conference service contractor will be selected to handle shipping and storage of exhibits, drayage, set-up and dismantling of exhibits; supply carpeting, furniture and miscellaneous supplies to the conference; rent furniture displays and miscellaneous items to exhibitors; provide electrical equipment and services, and generally support the conference and exhibitors. Upon request, an exhibitor may obtain an exhibitor's supplies and services kit from the conference service contractor. This kit will contain information on the costs of services and supplies available from the contractor.

Exhibit security will be provided using hotel guards and guards supplied by the conference security contractor. It is anticipated that three contractor guards will be required to provide exhibit hall security during daytime operating hours. One guard will be required overnight.

Additional contracting shall be arranged as necessary.

## Exhibits Program:

An Exhibits Program will be published which will provide a description of all exhibits and announce all exhibitors at the conference. Descriptions will be approximately 50-75 words long. Copies of this program will be provided to the exhibitors in an "Exhibitor's Registration Package" to be distributed on registration on the day of the conference.

## Exhibitor Registration:

An exhibitor registration desk will be open on the days of the conference. The exhibitor and staff may check in, register and pick up registration materials at this time. Exhibitor materials include copies of the Exhibits Program, special instructions, and staff and guest passes. An exhibitor may also preregister to the conference if so desired.

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Contingency Planning:

In the event that there is an overwhelming demand for booth space at the conference, and the conference is able to sell booths in excess of the 60 planned, the areas allocated for the lounge and poster session area shall be used for additional exhibit booths. The lounge and poster session areas shall be reduced in size to accommodate additional booths. Arrangements shall be made to accommodate serving refreshments and providing space for the poster sessions elsewhere at the conference.

Fire and Safety:

The exhibit area will be designed in accordance with local city fire codes and a permit will be obtained.

Additional Planning Information:

The conference's exhibit contract, rules and regulations package to be sent out to all prospective exhibitors contains additional procedural details that will form part of this plan.

IV. Volunteers.

In order to promote and facilitate local community involvement in the conference the Organizing Committee will solicit volunteer services from university students and other interested community members.

Volunteer services will include clerical and general help before and during the conference. The commitment of each volunteer will encompass:

• attending the volunteer meetings,

• pre-conference clerical work assignments, and

• one five-hour shift per day beginning Sunday, 18 June 1989, concluding on Thursday, 22 June 1989. Each conference day will be divided into three five-hour shifts: morning, afternoon, and evening. Shift assignments and scheduling will be made by the Hospitality Chair.

In exchange for satisfactory completion of these services, the IEEE ICNN volunteers will receive:

• complimentary registration to the IEEE International Conference on Neural Networks, and

• complimentary copy of the IJCNN-89 proceedings.

The Organizing Committee Chair will appoint a member of the Organizing Committee to assume responsibility for the volunteer effort. It will be that person's responsibility to ensure that all volunteers successfully complete their assignments in return for their complimentary registration and proceedings.

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# UNIVERSITY OF WASHINGTON
## SEATTLE, WASHINGTON

*Interactive Systems Design Laboratory*
*Department of Electrical Engineering, FT-10*
*Telephone: (206) 543-6990, 543-6061 or 543-2150*
*FAX: (206) 543-3842; marks@blake.acs.washington.edu*

December 20, 1988

TO: IEEE Neural Network Committee Member Society Presidents

I am the Secretary of the IEEE Neural Network Committee (NNC) of which your Society is a member. At the November 28 meeting of the NNC in Denver, Troy Nagle announced his resignation as NNC Chairman because he was elected 1989 IEEE Vice President for Technical Activities, and he could not hold both offices. As NNC Secretary, I assumed the position of NNC Chairman pro tem.

At the NNC meeting in Denver, a proposal was made to have an IEEE Neural Network publication starting in 1990. Prior to his resignation, Troy Nagle appointed me as Chairman of the four person NNC Publication Subcommittee appointed to investigate this possibility in more detail. The NNC Publication Subcommittee has discovered that in order to have a new IEEE publication starting in 1990, we must make a formal proposal to the IEEE Publication Committee which should meet in early February 1989. The four members of the NNC Publication Subcommittee have begun to prepare the formal proposal at the same time we are asking for your inputs. Our intent is to call the proposed publication the IEEE Transactions on Neural Networks. A slightly edited version of the informal proposal made at the NNC Denver meeting is enclosed.

The purposes of this letter are to:

(1) alert you to the plans for the 1990 publication

(2) let you alert your society Board of Governors

(3) solicit your comments

(4) solicit your suggestions for Editors or Associate Editors

We intend to send to you a draft of the formal proposal early in January, based on the information we gather in the next several weeks.

Below are listed the names, addresses, and telephone numbers of the four members of the NNC Publications Subcommittee.

Society Presidents of the IEEE NNC
Page 2

Please call me directly or contact any member of the subcommittee if you have questions. Thanks for your support.

Sincerely,

Robert J. Marks II
Professor

RJM:cc

Enclosure

cc: NNC Members

Members of NNC Publications Subcommittee:

Robert J. Marks II, Chair
Electrical Engineering Department, FT-10
University of Washington
Seattle, WA 98195
(206) 543-6990
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Evangelia Tzanakou
Biomedical Engineering
Rutgers University
P.O. Box 909
Piscataway, NJ 08854
(201) 932-2037
FAX: (201) 932-5313
Computer mail: ETZANAKO@elbereth.rutgers.edu

Herbert E. Rauch
Lockheed
Dept. 92-20, Building 254E
3215 Hanover Street
Palo Alto, CA 94304
(415) 424-2704
FAX: (415) 424-3333

## Proposal for IEEE Transactions on Neural Networks
### (21 December 1988)

**Introduction and Summary**  We propose publication of the subject Transactions on a quarterly basis beginning early in 1990.  The time line is (1) approval by the Neural Network Committee, (2) subsequent approval in the next few months by constituent societies, (3) at the same time preparation of detailed editorial plans (including Editor-in-Chief, Editors, Associate Editors, etc.), (4) presentation to IEEE Publication Board, TAB Finance Board, and TAB Periodicals Board, by end of February 1989, and (5) publication starting first quarter in 1990.

**Proposed Publication**  The budget for 1990 shows that a quarterly with 5000 copies and 320 pages for the year can have a potential surplus of $14K for the year.  The 5000 copies would be from 4000 subscribers from IEEE Societies (at $10 per year) and 1000 subscribers from the IEEE Transactions package (which is "guaranteed" at a total of $32K).  The 4000 IEEE subscribers would compare to the approximately 3500 current subscribers to the journal of the International Neural Network Society.

**Editorial Procedure**  The papers for the initial issues can be obtained from individual solicitation and from papers submitted to the 1989 IEEE International Conference on Neural Networks which has "final" papers due by March 1989.  Obtaining the papers for the initial issues will be a real challenge for the Editor-in-Chief, but after the "pipeline" is filled, the publication effort will settle somewhat.  It is suggested that there be one "Editor-in-Chief" plus several "Editors" (who will represent the several facets of neural network efforts) plus a number of Associate Editors.  The Editor-in-Chief would have a budget of $10K for secretary, mailing, etc.  A portion of this amount will be used to defray a portion of the Associate Editor's operational expenses.

**Preliminary Budget for Proposed IEEE Transactions on Neural Networks, 1990 Calendar Year**

Note: Information obtained from IEEE Staff -- Melvin Olken (212) 705-7178 from Technical Activities Department and Otto Vathke (212) 705-7551 from Publications Department.  The expense numbers obtained from Otto Vathke were for 1989 so they have been increased by 5% to represent costs in 1990.

**Budget:**  Quarterly publication; 320 pages annually; Income of $80K [1000 copies from Transactions package ($40K) and $10 per year per subscriber ($40K)]; Expenses of $66K [IEEE Publications ($56K) and Editor-in-Chief expenses ($10K)]; Surplus Potential of $14K [Income minus expenses].

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*FAX (206) 543-3842; marks@blake.acs.washington.edu*

1/13/89

Dear *IEEE Neural Networks Committee (NNC)* Members,

The *NNC Publications Subcommittee* has crafted the enclosed proposal for an *IEEE Transactions on Neural Networks*. By phone, computer mail, FAX or conventional mail, please vote *yes, no* or *abstain* on the following motion:

> THE (ATTACHED) PROPOSAL FOR AN **IEEE TRANSACTIONS ON NEURAL NETWORKS** SHOULD BE PRESENTED TO IEEE FOR APPROVAL.

Evangelia Tzanakou has agreed to serve as the *NNC's* Secretary pro tem until the *NNC* elections in June at the first *IJCNN*. Please submit your vote to her:

Evangelia Tzanakou
Biomedical Engineering
Rutgers University
P.O. Box 909
Piscataway, NJ 08854
(201) 932-2037
FAX: (201) 932-5313
etzanako@elbereth.rutgers.edu

The members of the *NNC Publications Subcommittee* are listed in the yellow section of the recent rainbow document you received.

## BACKGROUND:

There is a sense of urgency in this matter due to the scheduled meeting of the *IEEE Publications Committee* on February 15th and their request to receive a copy of the proposal by mid January. If the proposal is approved at this and subsequent approval stages at *IEEE*, the *Transactions* could be published in 1990. If this meeting is missed, publication, at the earliest, could begin in 1991. With this in mind, the *NNC Publications Subcommittee* has unanimously voted to proceed as follows:

Submit the proposal to the *IEEE Publications Committee* by the mid January deadline.
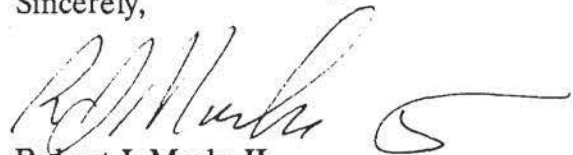
In parallel, hold a mail ballot vote among *NNC* members concerning the proposal with the understanding that if a majority favorable vote was not received by mid February, I would request that the proposal be taken off of the agenda of the ballot of the *IEEE Publications Committee* meeting. This is explained in the enclosed cover letter to Patricia Penick

My understanding is that the proposal will also have to be approved by the *IEEE Technical Activities Board (TAB)*. Each *IEEE* Society President is a voting member of the *TAB*. Thusfar, there has been positive input concerning a neural networks *Transactions* from three of the Society Presidents whose organizations are represented on the *NNC*.

The enclosed proposal requires the appointment of an Editor-in-Chief. Any nominations for potential candidates would be useful.

I believe (and hope) this will be the final mail ballot prior to our next meeting in D.C. in June. Thank you for your attention and speedy response. FYI, the proposal for the INNS-ICCN merger received 16 votes - all *yeah*.

Sincerely,

Robert J. Marks II
*NNC* Chairman pro tem

cc:     NNC Member Society Presidents

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1/12/88

Patricia Penick
IEEE Publications
345 E 47th St.
New York, NY 10017-2394
(212) 705-7550

Dear Ms. Penick:

Enclosed is a proposal for potential consideration by the *IEEE Publications Committee* at their February 15th meeting. I understand you will perform the necessary duplication and distribution of the material for the meeting.

The *IEEE Neural Networks Committee (NNC)* is currently in the process of voting on the attached proposal. A majority of the *NNC* must vote affirmatively on the proposal before it is officially presented to the *IEEE Publications Committee*. I will keep you informed of the status of this action.

Sincerely,

Robert J. Marks II
*NNC* Chairman pro tem

cc:     *NNC* Members
        *NNC* Member Society Presidents

# PROPOSAL

for

## PUBLICATION

of the

# IEEE TRANSACTIONS ON NEURAL NETWORKS

by the

# IEEE NEURAL NETWORKS COMMITTEE

which is composed of representatives of the *IEEE* Societies listed in Appendix A

## INTRODUCTION AND SUMMARY

This document presents a proposal for an *IEEE Transactions on Neural Networks* sponsored by the *IEEE Neural Networks Committee (NNC)* which is composed of representatives from the *IEEE* Societies listed in Appendix A. The proposed transactions will be a quarterly publication starting in 1990 with 320 pages (including covers). The cost to *IEEE* members in the member societies will be $10 and the cost to *IEEE* members outside of the member societies will be $15. The proposed four-year budget shows a small surplus of $13,000 in 1991 with more modest excesses in the subsequent three years. The proposed budget lists 4000 member subscribers in 1991 plus 1000 in the all-transactions package rising to 5500 member subscribers in 1993. If the current explosive interest in artificial neural networks continues, these figures are quite conservative.

## PROPOSAL

Over the past several years, interest has been building in the use of neural networks as an alternative to conventional computation. Some have envisioned neural networks as an alternative to artificial intelligence (AI) as a way to attack problems AI has been unable to solve. The recent explosive growth of activities in neural networks became apparent at the 1987 *IEEE International Conference on Neural Networks* held in San Diego on June 21-24 with over 1600 attendees. This led to the formation of an IEEE Neural Networks Committee which has overseen the *1988 IEEE International Conference on Neural Networks* held in San Diego, July 24-27, 1988 with over 1800 attendees.

The need for a centralized *IEEE* publication in artificial neural networks is parallel to the need for a centralized inter-Society *IEEE Neural Network Committee (NNC)*: there exists a broad spectrum of interest throughout (and from outside) *IEEE* in the topic. There have been a number of neural networks papers and special issues in the publications of *IEEE NNC* Societies. These scattered publications patterns, however, are quite difficult for the ever growing number of neural network researchers to follow. Furthermore, areas of analysis and application include not only those of the member NNC societies, but include many other topics such as biologically motivated processing, applications to engineering finance and forecast, and parallels to systems in physics. The current *IEEE* publications are not adequate to cover the ever expanding topical areas in this new field. The proposed publication is intended to supplement rather than replace the publication efforts of *IEEE* Societies.

Establishment of the subject Transaction would provide a valuable service to neural network researchers by making available a high quality apolitical archival publication that is characteristic of *IEEE*. There is little doubt that interest of those not currently in *IEEE* would increase membership through interest of those not currently members.

**Background:**
 *Artificial* neural networks are concerned with electronic and photonic computing architectures which loosely resemble biological counterparts. The earliest visible work in neural networks was done in the late 1950's and 1960's by Rosenblatt and Widrow. The celebrated Widrow-Hoff algorithm, conceived

initially as a training technique for neural networks, is today used in the adaptive channel equalization of virtually all long distance telephone systems to stabilize voice signals.

Interest in neural networks was rekindled by the visibility of the work of Hopfield starting in 1982. The interest in and application of neural networks has escalated dramatically. There have been significant demonstrations of neural networks applications in fields such as vision, speech, signal processing, pattern recognition, robotics and combinatorics. Characteristic of the current classification abilities of neural networks is *Nestor Inc.'s Kanji Character Recognizer* which translates handwritten Kanji characters into English. The system can accurately recognize approximately 2,500 handwritten Kanji characters better than 92% of the time. This compares quite favorably with the average Japanese reader who is capable of recognizing between 1,800 and 3,000 characters and has an intellectual grasp of perhaps 10,000 characters. Similar examples are numerous.

A large number of significant start-up companies dedicated primarily to neural networks have appeared in the last few years. A number of larger companies, including Bell Labs, Bellcore, Boeing, NTT, British Aerospace, Rockwell, Lockheed, TI and Hughes all have neural networks research programs . Government sponsored initiatives from both DoD and NSF are numerous. DARPA, for example, has recently announced a thirty three million dollar program for neural network research. MITE has a multi-million dollar initiative for neural network research in Japan. Cal Tech, USC and Boston University have all recently developed curricula dedicated to the study of neural networks.

A number of neural network journals supported by commercial publishing houses have recently been initiated. Now is the time for *IEEE* to launch a high quality publication in neural networks if it is to play a significant role in this growing field. Although this proposal calls for a quarterly publication of 320 pages, we anticipate a growth to 600 pages in the fourth year.

# I  SCOPE OF THE PROPOSED TRANSACTIONS

*The IEEE Transactions on Neural Networks* will publish high quality technical papers on the science and technology of neural networks which disclose significant technical knowledge, exploratory developments and applications of neural networks from biology to software to hardware. Emphasis will be given to *artificial* neural networks. Biological neural networks are included only to the extent where their understanding will enhance the fields of artificial neural networks or biological engineering. Specific acceptable categories include the following aspects of neural networks:

1. self organizing systems
2. neurobiological connections
3. network dynamics
4. network architectures
5. learning algorithms
6. associative memories
7. image processing
8. vision
9. speech recognition
10. combinatorial optimaztion
11. electronic implementation
12. photonic implementation
13. robotic and controls
14. novel applications

The Transactions will also contain a Letters section dedicated to rapid publication of short correspondences concerning new research results.

# II  SPONSORSHIP

The Transactions is to be sponsored by the *IEEE Neural Networks Committee* which is composed of the member Societies listed in Appendix A. As a result of the success of the *1988 IEEE International Conference on Neural Networks* held in San Diego, California on July 24-27, 1988, there is a slight surplus which accrued to the NNC. This was the second such conference as the *1987 IEEE International Conference on Neural Networks* was held in San Diego on June 21-24, 1987. The first *IEEE International Joint Conference on Neural Networks*, to be jointly sponsored by the *IEEE NNC* and the *International Neural Network Society*, will be held for the first time in June of 1989. Plans call for holding this conference twice yearly thereafter.

# III.  ADMINISTRATIVE MANAGEMENT OF THE JOURNAL

The management of the Journal shall be vested in an Editorial Board (hereafter, the Board) composed of voting members with one member nominated by each Society which is a member of the *IEEE Neural Networks Committee*. Each board member must be a member of the NNC. In other words, when a member *IEEE* Society appoints two members to the NNC, one of those two will be designated as a

member of the Board. Furthermore, an Editor-in-Chief (hereafter, Editor) of the Transactions (who need not be an NNC member) will serve as a non-voting member of the Board.

The Editor shall be selected by the Board. The Editor may be removed by a two-third majority vote of the Board. The term of office for the Editor shall be three years, renewable by the Board. The Editor-in-Chief shall nominate Associate Editors to be approved by the Board. A Board member may be an Associate Editor but may not in any way participate in the discussion or vote concerning their own nomination.

The Chairman of the Board shall be one of the appointed Board members and shall be elected annually by the Board. One Board member shall be selected to serve as Secretary-Treasurer. If a vacancy develops on the Board, the appropriate Organization shall designate a replacement. If the Chair resigns or is absent, the Secretary-Treasurer shall act as Chair pro tem.

All actions of the Board, except removal of the Editor, shall be by majority vote of the Board.

## IV.   EDITORIAL POLICY

Editorial selection and review shall be consistent with policies and practices of the *IEEE*.

There shall be no commercial advertising in the Journal. However, each of the *IEEE* Societies that are NNC members shall be entitled to place announcements featuring its publications or events to the extent of one full page in each issue, free of charge, or in amounts as may be mutually determined by the Board.

The papers for the initial issues can be obtained from individual solicitation and from papers submitted to the *1989 IEEE International Conference on Neural Networks (IJCNN)*. Final copies of the papers for the 1989 *IJCNN* are due by February 1989. This will allow ample lead time for the preparation of the first Transactions issue.

## V.   FINANCES

The budget for each calendar year shall be developed by the Board for approval by the *IEEE Neural Networks Committee* and for submission to the *IEEE* for final approval.

The budget shall include all customary *IEEE* Expense and Income items.

Attachment B shows the input data used in the financial analysis. Attachment C shows the financial projection for the years 1990 to 1993. All financial data are in terms of 1990 dollars.

Appendix A

## MEMBERSHIP STATISTICS

Membership Statistics relative to constituent societies of *IEEE Neural Network Committee* as of January 1, 1989:

| Society | Number of Members |
|---|---|
| ASSP | 14,651 |
| CAS | 13,837 |
| COMMUNICATIONS | 27,752 |
| CONTROL SYSTEMS | 10,000 |
| ENG & MED BIO | 7,235 |
| IND ELECTRONICS | 5,351 |
| INF THEORY | 5,153 |
| LASERS ELECT OP SOC | 6,397 |
| ROBOTIC AND AUTOMATION | 6,395 |
| SYSTEMS MAN & CYBER | 4,480 |
| | ———— |
| Total | 101,251 |

Appendix B

## FINANCIAL INPUT DATA

The expense numbers here are for a quarterly publication with 320 pages (including covers). This data was supplied by Otto Vathke (212) 705-7551 from the *IEEE* Publications. The expense numbers are for the cost in 1989 so they are increased by 5% to represent costs in 1990 as shown in the Proposed Budget in Appendix C.

### ESTIMATE FOR NEW TRANS.

| | | | |
|---|---|---|---|
| Total # pages/year | 320 | | |
| Total # of issues/year | 4 | | |
| Pages incl. covers-1 issue | 80 | | |
| Print Order | 5000 | Totals | |
| # of 32-page B&W forms | 2 | | 64 |
| # of 8-page B&W forms | 1 | | 8 |
| # of 4-page B&W forms | 1 | | 4 |
| No. forms | 4 | No. pages | 76 |

### FIXED COSTS:

| | | | |
|---|---|---|---|
| Editorial: | 80 pp @ $ 43.00 | | 3440.00 |
| Comp & Layout: | 80 pp @ $ 54.50 | | 4360.00 |
| Camera: | 80 pp @ $ 2.67 | | 213.60 |

| | | | |
|---|---|---|---|
| Press: | 32's | 396.26 | |
| | | 306.29 | |
| | 8's | 297.90 | |
| | | .00 | |
| | 4's | 100.90 | |
| | C&F | 32.80 | |
| | | | 5134.14 |

| | | |
|---|---|---|
| Outside covers: | | |
| 2 color, pass 1 side | 132.37 | |
| Run | 161.60 | |
| Inside covers: | | |
| 1 color, pass 1 side | 60.21 | |
| Run | 62.35 | |
| Cut & Score | 10.95 | |
| | | 427.48 |

| | | |
|---|---|---|
| Binding: | 287.34 | |
| | | 287.34 |

### VARIABLE COSTS:

| | | |
|---|---|---|
| Press: | 32's, 24's, | 224.40 |

Appendix B
Page 2

| | | | |
|---|---|---|---:|
| Mailing labor | | | 310.97 |
| Mailing labels: | | 5000 labs @ $ .040 | 200.00 |
| Postage | | | 987.19 |
| Paper: | Text: | 999.16 | |
| | Cover: | 185.64 | 1184.80 |
| | | | ----------- |
| Subtotal | | | 12846.38 |

| | | |
|---|---|---:|
| Pub Admin Costs: | | |
| | 80 pp @ $3.90/page | 312.00 |
| | Cost per issue | 218.00 |
| | | ----------- |
| TOTAL PER ISSUE | | 13376.38 |
| TOTAL PER YEAR 1988 | | 53505.50 |
| COST PER PAGE 1988 | | 167.20 |

* * * *   * * * *

Note: This estimate does not include cost of servicing nonmember subscriptions. Postage does not include extra cost for overseas air mail (which is paid for directly by subscriber). Postage is based on average distribution between domestic and overseas regular mail.

Appendix C

## Proposed Transactions on Neural Networks
## Budget Estimates 1990 to 1993

| Year | 1990 | 1991 | 1992 | 1993 |
|---|---|---|---|---|
| Number of Pages: | 320 | 400 | 496 | 592 |
| Ind. Non Member Rate | $75.0 | $75.0 | $90.0 | $90.0 |
| Member Fee | $10.0 | $10.0 | $13.0 | $13.0 |
| Number of Copies: | | | | |
| Full Trans. Package | 1000 | 1000 | 1000 | 1000 |
| Member Subs. | 4000 | 4500 | 5000 | 5500 |
| Total Printrun | 5000 | 5500 | 6000 | 6500 |
| Costs: | | | | |
| Prod. and Distr. | 56.0 | 67.8 | 87.1 | 102.9 |
| Indexing | 1.0 | 1.4 | 1.6 | 1.8 |
| Direct Editorial Exp. | 10.0 | 14.0 | 16.0 | 18.0 |
| Total Costs | 67.0 | 83.2 | 104.7 | 122.7 |
| Income: | | | | |
| Member Fees | 40.0 | 45.0 | 65.0 | 71.5 |
| Full Trans. Package | 40.0 | 47.0 | 52.0 | 56.0 |
| Total Income: | 80.0 | 92.0 | 117.0 | 127.0 |
| Net: | +13.0 | +8.8 | +12.3 | +4.3 |

# UNIVERSITY OF WASHINGTON
## SEATTLE, WASHINGTON

*Interactive Systems Design Laboratory*
*Department of Electrical Engineering, FT-10*
*Telephone: (206) 543-6990, 543-6061 or 543-2150*
*FAX: (206) 543-3842; marks@blake.acs.washington.edu*

December 20, 1988

TO:  IEEE Neural Network Committee Member Society Presidents

I am the Secretary of the IEEE Neural Network Committee (NNC) of which your Society is a member.  At the November 28 meeting of the NNC in Denver, Troy Nagle announced his resignation as NNC Chairman because he was elected 1989 IEEE Vice President for Technical Activities, and he could not hold both offices.  As NNC Secretary, I assumed the position of NNC Chairman pro tem.

At the NNC meeting in Denver, a proposal was made to have an IEEE Neural Network publication starting in 1990.  Prior to his resignation, Troy Nagle appointed me as Chairman of the four person NNC Publication Subcommittee appointed to investigate this possibility in more detail.  The NNC Publication Subcommittee has discovered that in order to have a new IEEE publication starting in 1990, we must make a formal proposal to the IEEE Publication Committee which should meet in early February 1989. The four members of the NNC Publication Subcommittee have begun to prepare the formal proposal at the same time we are asking for your inputs.  Our intent is to call the proposed publication the IEEE Transactions on Neural Networks.  A slightly edited version of the informal proposal made at the NNC Denver meeting is enclosed.

The purposes of this letter are to:

(1)  alert you to the plans for the 1990 publication

(2)  let you alert your society Board of Governors

(3)  solicit your comments

(4)  solicit your suggestions for Editors or Associate Editors

We intend to send to you a draft of the formal proposal early in January, based on the information we gather in the next several weeks.

Below are listed the names, addresses, and telephone numbers of the four members of the NNC Publications Subcommittee.

Society Presidents of the IEEE NNC
Page 2

Please call me directly or contact any member of the subcommittee if you have questions. Thanks for your support.

Sincerely,

Robert J. Marks II
Professor

RJM:cc

Enclosure

cc: NNC Members

Members of NNC Publications Subcommittee:

Robert J. Marks II, Chair
Electrical Engineering Department, FT-10
University of Washington
Seattle, WA 98195
(206) 543-6990
FAX: (206) 543-3842
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University of Maryland
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Evangelia Tzanakou
Biomedical Engineering
Rutgers University
P.O. Box 909
Piscataway, NJ 08854
(201) 932-2037
FAX: (201) 932-5313
Computer mail: ETZANAKO@elbereth.rutgers.edu

Herbert E. Rauch
Lockheed
Dept. 92-20, Building 254E
3215 Hanover Street
Palo Alto, CA 94304
(415) 424-2704
FAX: (415) 424-3333

## Proposal for IEEE Transactions on Neural Networks
### (21 December 1988)

**Introduction and Summary**  We propose publication of the subject Transactions on a quarterly basis beginning early in 1990.  The time line is (1) approval by the Neural Network Committee, (2) subsequent approval in the next few months by constituent societies, (3) at the same time preparation of detailed editorial plans (including Editor-in-Chief, Editors, Associate Editors, etc.), (4) presentation to IEEE Publication Board, TAB Finance Board, and TAB Periodicals Board, by end of February 1989, and (5) publication starting first quarter in 1990.

**Proposed Publication**  The budget for 1990 shows that a quarterly with 5000 copies and 320 pages for the year can have a potential surplus of $14K for the year.  The 5000 copies would be from 4000 subscribers from IEEE Societies (at $10 per year) and 1000 subscribers from the IEEE Transactions package (which is "guaranteed" at a total of $32K).  The 4000 IEEE subscribers would compare to the approximately 3500 current subscribers to the journal of the International Neural Network Society.

**Editorial Procedure**  The papers for the initial issues can be obtained from individual solicitation and from papers submitted to the 1989 IEEE International Conference on Neural Networks which has "final" papers due by March 1989.  Obtaining the papers for the initial issues will be a real challenge for the Editor-in-Chief, but after the "pipeline" is filled, the publication effort will settle somewhat.  It is suggested that there be one "Editor-in-Chief" plus several "Editors" (who will represent the several facets of neural network efforts) plus a number of Associate Editors.  The Editor-in-Chief would have a budget of $10K for secretary, mailing, etc.  A portion of this amount will be used to defray a portion of the Associate Editor's operational expenses.

**Preliminary Budget for Proposed IEEE Transactions on Neural Networks, 1990 Calendar Year**

Note:  Information obtained from IEEE Staff -- Melvin Olken (212) 705-7178 from Technical Activities Department and Otto Vathke (212) 705-7551 from Publications Department.  The expense numbers obtained from Otto Vathke were for 1989 so they have been increased by 5% to represent costs in 1990.

**Budget:**  Quarterly publication; 320 pages annually; Income of $80K [1000 copies from Transactions package ($40K) and $10 per year per subscriber ($40K)]; Expenses of $66K [IEEE Publications ($56K) and Editor-in-Chief expenses ($10K)]; Surplus Potential of $14K [Income minus expenses].

# UNIVERSITY OF WASHINGTON
## SEATTLE, WASHINGTON

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*FAX: (206) 543-3842; marks@blake.acs.washington.edu*

December 14, 1988

Dear NNC Committee Members:

Enclosed is an agreement endorsed by an NNC subcommittee concerning a merger of the ICNN with the INNS conference. Please look it over and, as a representative of your society, vote yes or no. Please note that, if the proposal passes, we are up against a 1 January 1989 deadline for call-for-papers mailings using the new conference name.

You may vote in one of three ways. In order of preference:

1. Computer mail (my address is on the letterhead).

2. By FAX or phone (also on the letterhead). Phone calls should be to (206) 543-6061 to Cindy Chernoff.

3. By conventional mail.

Since there are 18 NNC members, 10 yes votes will pass the measure.

Thank you for your speedy response.

Sincerely,

Robert J. Marks II
NNC Chairman pro tem
NNC Secretary

RJM:cc

Enclosure

*Page 1*

## AGREEMENT

The IEEE Neural Networks Committee and the International Neural Network Society

In the interest of promoting research, development, and education in the area of Neural Networks, the IEEE Neural Networks Committee (NNC) and the International Neural Network Society (INNS) agree to jointly sponsor international meetings, known hereafter as the "International Joint Conferences on Neural Networks", equally sharing the risk and the surplus of the conferences. In this spirit, a trial period of two years has been agreed upon, as covered by the following articles.

1) This document becomes effective January 1, 1989.

2) The conference shall be entitled the International Joint Conference on Neural Networks (IJCNN)

3) Primary responsibility for operation of each conference shall alternate between the two societies. The society with responsibility for a particular conference shall be known as the "lead society"

4) The lead society shall appoint the organizing committee, consisting of the general chair, program chair, and finance chair. The program and finance chairs from the previous conference shall serve on those committees. The vice chairs of the program and finance committees shall be appointed by the other society.

5) Both societies may organize and operate membership booths in conjunction with registration. Society publications may be sold at these booths. Registrants may join either society at the meeting and receive member discounts.

6) Proceedings of the joint conferences will be sold to members of either society at the member's rate. The conference committee should approach the IEEE book broker program to establish a mechanism for post-conference sales. Establishment of this mechanism shall be part of the budget planning

process for each conference. The lead society will be responsible for post conference sales of proceedings.

7) Copyrights to the conference proceedings will be controlled by the lead society.

8) Exhibits are encouraged as a integral part of the conferences. The conference committee will be responsible for establishing an exhibits program, in coordination with members of the vendor community.
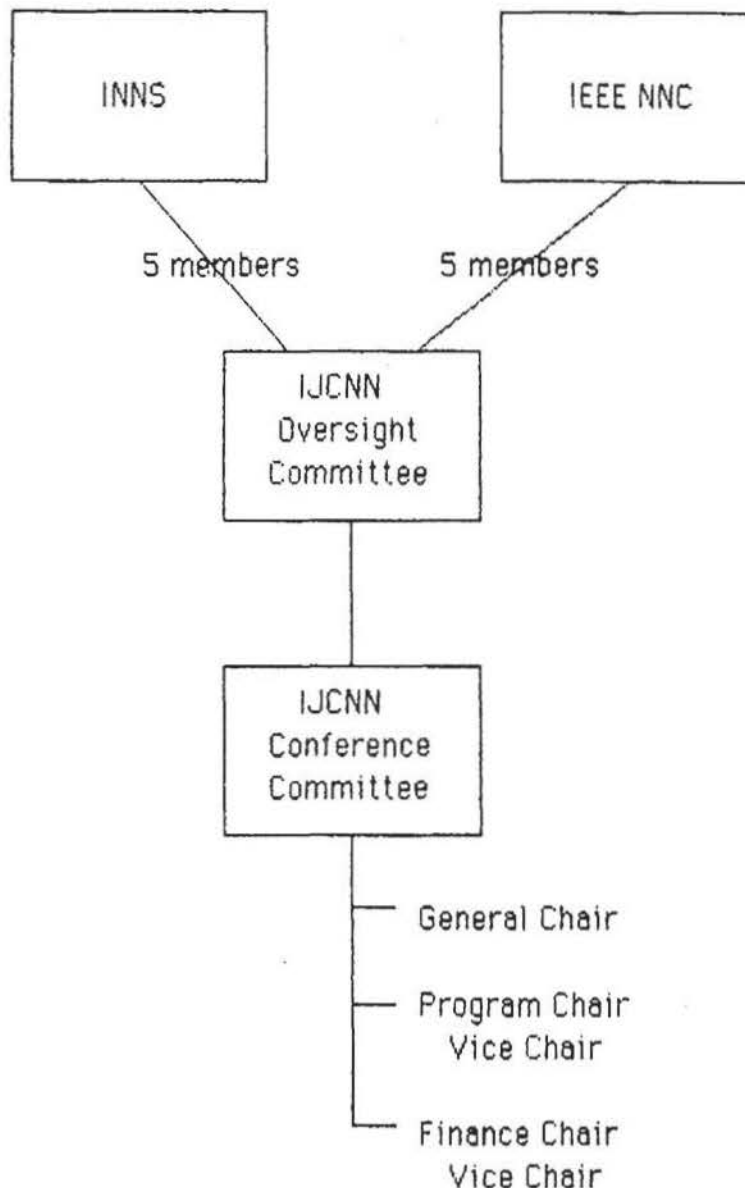
9) As a general guideline, speakers (except for tutorial speakers) are not compensated for their presentations. Plenary speakers normally have their travel expenses paid. The conference committee will set specific arrangements in accordance with the policies of both parent societies. Compensation for tutorial speakers shall be consistent with the policies of the parent societies. Session chairs are not normally compensated for their travel expenses.

10) Registration fees will be determined by the conference committee and submitted to the sponsoring societies as part of the conference budget. Significant fluctuations in fees for contiguous meetings are discouraged.

11) All expenses associated with the conference will be included in the conference budget which must be approved by both societies. It is the responsibility of the conference committee to enforce adherence to the budget.

12) There shall be an oversight committee, consisting of not more than 5 people, appointed by the IEEE NNC, and not more than 5 people appointed by the INNS Executive Committee. This IJCNN Oversight Committee shall serve to ensure adherence to this agreement and to mediate any disagreements as provided in item 14. The following diagram specifies the organizational structure:

```
  ┌──────────┐              ┌──────────┐
  │   INNS   │              │ IEEE NNC │
  └──────────┘              └──────────┘
        \                        /
      5 members            5 members
          \                  /
         ┌──────────────────┐
         │      IJCNN        │
         │    Oversight      │
         │    Committee      │
         └──────────────────┘
                  │
         ┌──────────────────┐
         │      IJCNN        │
         │    Conference     │
         │    Committee      │
         └──────────────────┘
                  │
                  ├── General Chair
                  │
                  ├── Program Chair
                  │     Vice Chair
                  │
                  └── Finance Chair
                        Vice Chair
```

13) This agreement will cover the first four meetings:

June, 1989, Washington, DC -- Lead society, IEEE
January, 1990, Washington, DC--Lead society, INNS
June, 1990, San Diego--Lead society, IEEE
January, 1991, West Coast--Lead society, INNS

There will be an evaluation of the effectiveness of this agreement by the oversight committee after the January, 1990 meeting.

14) Disagreements within the conference committee may be mediated by the oversight committee. If the oversight committee cannot resolve the disagreement, the matter is referred to the NNC and the INNS board.

15) Either society unilaterally may withdraw from (dissolve) this agreement. In the event of dissolution, each society shall honor its previously approved budgets. In case of dissolution, the title IJCNN may not be used by either society, and both societies shall retain the use of their original conference names:

INNS Annual Meeting: INN Society
ICNN: IEEE Neural Networks Committee

Dissolution may not be affected until after the January 1990 conference. Budgets for conferences thereafter will be approved in pairs.

*****************************************************************

This document was duly discussed and jointly prepared by the IEEE NNC negotiating committee and the INNS executive committee on 29 November, 1988.

Recommended for approval by the NNC Negotiating Committee:

_____ Chair    Date: 11/29/88

_____            Date: 11/29/88

_____            Date: 11/29/88

_____            Date: 11/29/88

_____            Date: 11/29/88

_____(Observer)          Date: 11/29/88

*Page 5*

Approved by the INNS executive committee:

_B. Widrow_ Chair      Date: _11/29/88_

_____      Date: _____

_Terry Sejnowski_      Date: _11/29/88_

Approved for the NNC by its Chair:

_____      Date: _____

# UNIVERSITY OF WASHINGTON
## SEATTLE, WASHINGTON

*Interactive Systems Design Laboratory*
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*FAX: (206) 543-3842; Marks@uw-isdl.ee.washington.edu*

December 7, 1988

Dr. H. Troy Nagle
Electrical and Computer Engineering
North Carolina State University
Box 7911
Raleigh, NC 27695

Dear Troy:

Greetings!

Two items:

1. Attached for your review is a copy of the NNC minutes from our NIPS meeting. If I receive no comments from you by December 19th, I'll mail as is.

2. I believe Fernando Aldana would be a good candidate for NNC Chair. I believe he would be willing. He has a clear vision for the future of the NNC with which I concur.

If drafted, I would be willing to serve as NNC Ch⸱ ⁻ ᵗᵈˡʸ however, I would favor one who was more seasoned.

Best:

X₀

Rob⸱
Prof

*Change Bob's*
*Computer mail*
*address ⟶*

RJM:cc

Attachment

The essential conditions of the agreement as they have been agreed upon
by the INNS Board are:

1) the merger of the meetings would take place beginning
   with the 1989 ICNN;

2) the surplus from each meeting would be split evenly between
   the IEEE and the INNS;

3) the June 1989 IEEE meeting scheduled for D.C. would become a
   joint meeting between IEEE and INNS with IEEE as the lead
   society (lead society means primary, but not exclusive,
   responsibility for managing the meeting.)

4) the September 1989 INNS meeting scheduled for D.C. would be
   shifted to January 1990, and become a joint meeting with INNS
   as the lead society;

5) under the auspices of the IEEE and INNS, in steady state,
   three meetings per year would be held - two in the U.S. and
   one overseas;

6) the two U.S. meetings would be held in June with the IEEE
   as lead society and in January with INNS as the lead society;

7) in steady state, the overseas meeting would be held odd years
   in Europe and even years in Asia, in the late August - early
   September time frame;

8) planning for the 1991 meeting in Eurpoe would take place in
   March 1990 at an invitational workshop in Dusseldorf;

9) the 1991 European meeting would likely take place in
   Helsinki with Kohonen as the primary organizer.

Attachment #1

# ICNN88 Treasurer's Preliminary Report

## Income:

| | |
|---|---:|
| Registration | $ 315,673 |
| Exhibits | 45,250 |
| Proceedings | 26,850 |
| Interest | 2,505 |
| Misc./Pool Fees | 5,184 |
| **Total Revenue** | **395,462** |

## Expenses:

| | |
|---|---:|
| Publicity | 34,253 |
| Administration | 11,899 |
| Exhibits | 10,368 |
| Program & Proceedings | 60,879 |
| Hospitality | 77,809 |
| Keynote/Chairs Travel | 11,446 |
| Local Arrangements | 41,320 |
| **Total Expenses** | **247,974** |

| | |
|---|---:|
| **Surplus:** | **147,488** |
| **NNC Share (50%):** | **$ 73,744** |

Attachment #2

**IEEE**

**CSS**

## CONTROL SYSTEMS SOCIETY

M E M O R A N D U M

Herbert E. Rauch, Editor
IEEE CONTROL SYSTEMS MAGAZINE
Lockheed 92-20/254 E
3251 Hanover Street
Palo Alto, CA 94304 USA
(415) 424-2704

To    IEEE Neural Network Committee

From   Herbert E. Rauch

November 22, 1988

Subject   Proposal for IEEE Transactions on Neural Networks

**Introduction and Summary**  At the July 1988 meeting of the
IEEE Neural Network Committee in San Diego, Troy Nagle asked
me to prepare a proposal for an IEEE Neural Networks Transactions
(or Journal) to present at the November 1988 meeting in
Denver.  I am unable to attend the meeting, so this memorandum
represents the proposal which includes a budget for a quarterly
starting early in 1990.  The time line is (1) tentative
approval by the Neural Network Committee in Denver, (2)
subsequent approval in the next few months by constituent
societies, (3) at the same time preparation of detailed
editorial plans (including Editor-in-Chief, Editors,
Associate Editors, etc.), (4) presentation to IEEE Publication
Board, TAB Finance Board, and TAB Periodicals Board, by
end of February 1989, and (5) publication starting first
quarter in 1990.

**Proposed Publication**  The attached budget for 1990 shows that
a quarterly with 5000 copies and 208 pages for the year
(four times 48 pages plus covers) can have a potential surplus
of $24K for the year.  The 5000 copies would be from 4000
subscribers from IEEE Societies (at $10 per year) and 1000
subscribers from the IEEE Transactions package (which is
"guaranteed" at a total of $32 K).  The 4000 IEEE subscribers
would compare to the approximately 3,500 current subscribers
to the Journal of the International  Neural Network Society.
The attached budget shows that increasing the proposed number
of pages from 208 to 320 would decrease the potential surplus
from $24K to $14K.  The budget also shows the effect of 3000
subscribers and 7000 subscribers as compared to 5000 subscribers
with more subscribers increasing the potential  surplus.

**Editorial Procedure**  The papers for the initial issues can
be obtained from individual solicitation and from papers
submitted to the 1989 IEEE International Conference on
Neural Networks which has "final" papers due by March 1989.
Obtaining the papers for the initial issues will be a real
challenge  for the Editor-in-Chief, but after the "pipeline"
is filled, the publication effort will settle somewhat.  It is
suggested  that there be one "Editor-in-Chief" plus several
"Editors" (who will represent the several facets of Neural
Network efforts) plus a number of Associate Editors.
The Editor would have a budget of $10K for secretary, etc.

Memorandum on Proposal for IEEE Transactions- page 2

Action Item   If the IEEE Neural Network Committee gives approval to
the  proposal for an IEEE Neural Networks publication starting
in 1990, then additional approval can be solicited from the
societies and work can begin on the efforts needed to start the
publication.   In particular, a more detailed proposal needs to be
prepared for the IEEE Boards, and decisions need to be made concerning
proposed Editors.   I volunteer to help with these activities.
My suggestion is that a committee be appointed (perhaps three people)
with suggestions from the attendees in Denver, and this committee
begin to contact candidate Editors.

Sincerely,

Herbert E. Rauch

FOR 1990 CALENDAR YEAR
Preliminary Budget for Proposed IEEE Transactions on Neural Networks

Note:  Information obtained from IEEE Staff-  Melvin Olken (212)705-7178
from Technical Activities Department and Otto Vathke (212)705-7551
from Publications Department.   The expense numbers obtained from
Otto Vathke were for 1989 so they have been increased by 5% to
represent costs in 1990.

| | | | | |
|---|---|---|---|---|
| Pages | 208 | 208 | 208 | 320 |
| Copies | 3K | 5K | 7K | 5K |
| **INCOME** | | | | |
| Transactions Package (1000 copies) | $32K | $32K | $32K | $40K |
| Subscribers ($10 per year) | $20K | $40K | $60K | $40K |
| INCOME TOTAL | $52K | $72K | $92K | $80K |
| **EXPENSES** | | | | |
| IEEE Publications | $34K | $38K | $42K | $56K |
| Editor Expenses | $10K | $10K | $10K | $10K |
| EXPENSES TOTAL | $44K | $48K | $52K | $66K |
| POTENTIAL SURPLUS | $8K | $24K | $40K | $14K |
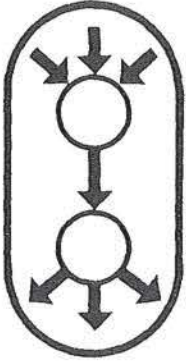
# NEURAL NETWORKS

## CALL FOR PAPERS

### IEEE International Conference on Neural Networks
June 19-22, 1989
Washington, D. C.

The 1989 IEEE International Conference on Neural Networks (ICNN-89) will be held at the Sheraton Washington Hotel in Washington, D.C., USA from June 19-22, 1989. ICNN-89 is the third annual conference in a series devoted to the technology of neurocomputing in its academic, industrial, commercial, consumer, and biomedical engineering aspects. The series is sponsored by the IEEE Technical Activities Board Neural Network Committee, created in Spring 1988. ICNN-87 and 88 were huge successes, both in terms of large attendance and high quality of the technical presentations. ICNN-89 continues this tradition. It will be, by far, the largest and most important neural network meeting of 1989. As in the past, the full text of the papers presented orally in the technical sessions will be published in the Conference Proceedings (along with some particularly outstanding papers from the Poster Sessions). The Abstract portions of all poster papers not published in full will also be published in the Proceedings. The Conference Proceedings will be distributed *at the registration desk* to all regular conference registrants as well as to all student registrants. This gives conference participants the full text of every paper presented in each technical session -- which greatly increases the value of the conference. ICNN is the only major neural network conference in the world to offer this feature. As is now a tradition, ICNN-89 will include a day of tutorials (June 18), the exhibit hall (the neurocomputing industry's primary annual trade show), plenary talks, and social events. Mark your calendar today and plan to attend IEEE ICNN-89 -- the definitive annual progress report on the neurocomputing revolution!

**Deadline for submission of papers** for ICNN-89 is February 1, 1989. Papers of 8 pages or less are solicited in the following areas:

- Real World Applications
- Neural Network Theory & Architectures
- Supervised Learning Theory
- Reinforcement Learning Theory
- Robotics and Control
- Optical Neurocomputers
- Optimization

- Associative Memory
- Image Processing
- Self-Organization
- Neurobiological Models
- Vision
- Electronic Neurocomputers

Papers should be prepared in standard IEEE Conference Proceedings Format, and typed on the special forms provided in the Author's Kit. The Title, Author Name, Affiliation, and Abstract portions of the first page of the paper must be less than a half page in length. Indicate in your cover letter which of the above subject areas you wish your paper included in and whether you wish your paper to be considered for oral presentation, presentation as a poster, or both. For papers with multiple authors, indicate the name and address of the author to whom correspondence should be sent. Papers submitted for oral presentation may, at the referees' discretion, be designated for poster presentation instead, if they feel this would be more appropriate. **FULL PAPERS** in camera-ready form (1 original and 5 copies) should be submitted to Nomi Feldman, Conference Coordinator, at the address below. For more details, or to request your IEEE Author's Kit, call or write:

Nomi Feldman,
ICNN-89 Conference Coordinator
3770 Tansy Street
San Diego, CA 92121
(619) 453-6222

# UNIVERSITY OF WASHINGTON
## SEATTLE, WASHINGTON

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*Department of Electrical Engineering, FT-10*
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*FAX: (206) 543-3842; Marks@uw-isdl.ee.washington.edu*

December 5, 1988

Dear IEEE Neural Network Committee (NNC) Members:

Enclosed is a copy of the minutes of the NNC meeting held at the NIPS conference. Also included is a tentative list of action items for the next NNC meeting at ICNN '89. Please let me know of any other items you would like placed on the agenda.

Sincerely,

Robert J. Marks II
Professor

RJM:cc

Enclosures

cc: Member Society Presidents
    M. Aronstein, San Diego Section
    Nomi Feldman

Action items for the NNC meeting at ICNN '89

- Election of next NNC Chair - Nominating Committee
- ICNN-INNS Merger Status - INNS Negotiating Committee
- NNC Transactions and/or other publications - Publications Committee
- Financial Reports
- Future meeting status reports
- Other

# CERTIFICATE OF COPYRIGHT REGISTRATION

**FORM TX**
UNITED STATES COPYRIGHT OFFICE

This certificate, issued under the seal of the Copyright Office in accordance with the provisions of section 410(a) of title 17, United States Code, attests that copyright registration has been made for the work identified below. The information in this certificate has been made a part of the Copyright Office records.

REGISTRATION NUMBER

TXu 350 518

TX ☐    TXU ☑

EFFECTIVE DATE OF REGISTRATION

29 NOV 1988

Month    Day    Year

*REGISTER OF COPYRIGHTS*
United States of America

OFFICIAL SEAL

**DO NOT WRITE ABOVE THIS LINE. IF YOU NEED MORE SPACE, USE A SEPARATE CONTINUATION SHEET.**

## 1

**TITLE OF THIS WORK ▼**

Introduction to Artificial Neural Systems

**PREVIOUS OR ALTERNATIVE TITLES ▼**

**PUBLICATION AS A CONTRIBUTION** If this work was published as a contribution to a periodical, serial, or collection, give information about the collective work in which the contribution appeared. **Title of Collective Work ▼**

If published in a periodical or serial give: Volume ▼    Number ▼    Issue Date ▼    On Pages ▼

## 2

**NAME OF AUTHOR ▼**

a    Robert J. Marks II

**DATES OF BIRTH AND DEATH**
Year Born ▼    Year Died ▼

1950

Was this contribution to the work a "work made for hire"?
☐ Yes
☑ No

**AUTHOR'S NATIONALITY OR DOMICILE**
Name of Country
OR { Citizen of ▶ USA
{ Domiciled in ▶

**WAS THIS AUTHOR'S CONTRIBUTION TO THE WORK**
Anonymous?    ☐ Yes ☑ No
Pseudonymous?    ☐ Yes ☑ No
If the answer to either of these questions is "Yes," see detailed instructions.

**NATURE OF AUTHORSHIP** Briefly describe nature of the material created by this author in which copyright is claimed. ▼

**NOTE**
Under the law, the "author" of a "work made for hire" is generally the employer,

**NAME OF AUTHOR ▼**

b    Les E. Atlas

**DATES OF BIRTH AND DEATH**
Year Born ▼    Year Died ▼

1953

Was this contribution to the work a "work made for hire"?
☐ Yes
☑ No

**AUTHOR'S NATIONALITY OR DOMICILE**
Name of country
OR { Citizen of ▶ USA
{ Domiciled in ▶

**WAS THIS AUTHOR'S CONTRIBUTION TO THE WORK**
Anonymous?    ☐ Yes ☑ No
Pseudonymous?    ☐ Yes ☑ No
If the answer to either of these questions is "Yes," see detailed instructions.

**NATURE OF AUTHORSHIP** Briefly describe nature of the material created by this author in which copyright is claimed. ▼

**NAME OF AUTHOR ▼**

c

**DATES OF BIRTH AND DEATH**
Year Born ▼    Year Died ▼

Was this contribution to the work a "work made for hire"?
☐ Yes
☐ No

**AUTHOR'S NATIONALITY OR DOMICILE**
Name of Country
OR { Citizen of ▶
{ Domiciled in ▶

**WAS THIS AUTHOR'S CONTRIBUTION TO THE WORK**
Anonymous?    ☐ Yes ☐ No
Pseudonymous?    ☐ Yes ☐ No
If the answer to either of these questions is "Yes," see detailed instructions.

**NATURE OF AUTHORSHIP** Briefly describe nature of the material created by this author in which copyright is claimed. ▼

## 3

**YEAR IN WHICH CREATION OF THIS WORK WAS COMPLETED** This information must be given in all cases.

1988 ◀ Year

**DATE AND NATION OF FIRST PUBLICATION OF THIS PARTICULAR WORK** Complete this information ONLY if this work has been published.

Month ▶    Day ▶    Year ▶    ◀ Nation

## 4

**COPYRIGHT CLAIMANT(S)** Name and address must be given even if the claimant is the same as the author given in space 2.▼

Les E. Atlas & Robert J. Marks II
Dept. of Electrical Engineering
University of Washington
Seattle, WA 98195

See instructions before completing this space.

**TRANSFER** If the claimant(s) named here in space 4 are different from the author(s) named in space 2, give a brief statement of how the claimant(s) obtained ownership of the copyright.▼

APPLICATION RECEIVED
NOV. 29. 1988

ONE DEPOSIT RECEIVED
NOV 29 1988

TWO DEPOSITS RECEIVED

REMITTANCE NUMBER AND DATE

DO NOT WRITE HERE OFFICE USE ONLY

**MORE ON BACK ▶** • Complete all applicable spaces (numbers 5-11) on the reverse side of this page.
• See detailed instructions. • Sign the form at line 10.

DO NOT WRITE HERE

香港城市理工學院
**City Polytechnic of Hong Kong**
九龍旺角彌敦道七零零號旺角中心第二座
電話：三・九八四三二一
Argyle Centre, Tower II
700, Nathan Road, Mongkok, Kowloon, Hong Kong
Cable: CITYPOLYHK   Telex: 39369 CPOLY HX
FAX: 3-970275   Phone: 3-984321

Director: Dr David Johns

Your ref:

Our ref:

Dept. of Electronic Engineering
Kowloon Tong Campus

December 16, 1988

Robert J. Marks II
*Interactive System Design Laboratory*
FT-10 University of Washington
Seattle Wa 98195
U.S.A.

Dear Bob,

*Greetings!*

Merry Christmas to all *ISDL* colleaques. May my best wishes be with you all.

Finally finally I've finished the first draft of the second sampling paper. It is produced by the LaTeX. I hope it looks good enough. The source file is also enclosed on a $5\frac{1}{4}$" inches diskette. The file is ASCII and if you need some changes or modification, you can use the *Microsoft WORD* to do it. Or ask a TeXpert at best. At the moment, I only have the draft for the figures. All the figures will be taken care of by CPHK draftsmen. Their turn around time is around two months — slow as a snail. They told me the figures would be ready by the end of January. Is it OK?

In the time to come, I'll do my best in publishing papers. As you say, this is important for me if I'm planning to return to the States. In addition to that, it also helps me greatly in concentration. Enclosed is an flyer for the 1989 *IEE* International Symposium on Computer Architecture and Digital Signal Processing. It will be held in Hong Kong next year. One of the area included in the Symposium is the neural network. Any interest?

More or less, I feel I haven't matured yet. I am "cloning" your style (even gestures) all the time. People in this Department are so amazed in all your ways of doing things. Students like it too. I call it Marks' style. I hope sooner or later I'll have my own style.

God bless

*Kwan*

Kwan F. Cheung
Lecturer

# UNIVERSITY OF WASHINGTON
## SEATTLE, WASHINGTON

*Interactive Systems Design Laboratory*
*Department of Electrical Engineering, FT-10*
*Telephone: (206) 543-6990, 543-6061 or 543-2150*
*FAX: (206) 543-3842; Marks@uw-isdl.ee.washington.edu*

December 7, 1988

Dr. Glenn Schaefer
Senior Editor, Computer Group
Bowker A&I Publishing
245 West 17th Street
New York, NY 10011

Dear Dr. Schaefer:

I write in response to your letter dated 11/14/88 concerning articles on artificial neural networks. Enclosed are two technically low level tutorials our group recently presented at a local conference. It sounds as if they meet your specifications. Please let us know if you agree.

Sincerely,

Robert J. Marks II
Professor

RJM:cc

Enclosures

cc: Les Atlas

**BOWKER A&I PUBLISHING**

THE ABSTRACTING AND INDEXING DIVISION OF R. R. BOWKER

Formerly EIC/intelligence

November 14, 1988

Mr. R. J. Marks II
University of Washington
Seattle, WA  98195

Dear Mr. Marks:
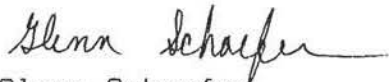
I am currently in the process of soliciting articles for publication in the 1988 Artificial Intelligence Abstracts Annual Index.  I seek one or two, preferably unpublished, general articles about the current status of artificial intelligence R&D.  Articles could discuss expected future trends in AI research and applications, or the evolution of AI research leading up to the current stage of R&D.

General, non-technical articles are preferred, but technical/research articles focusing on a popular topic in AI (i.e., neural networks, expert systems, voice recognition, intelligent robots) are also welcome.

Please look through your files, and send me a copy (before Jan. 15, 1989) of that article that the rest of the AI world should see.

Compensation for articles will be based on content, length, and editorial quality. Feel free to call me if you have any questions.

Sincerely,

Glenn Schaefer
Senior Editor, Computer Group

# UNIVERSITY OF WASHINGTON
## SEATTLE, WASHINGTON

*Interactive Systems Design Laboratory*
*Department of Electrical Engineering, FT-10*
*Telephone: (206) 543-6990, 543-6061 or 543-2150*
*FAX: (206) 543-3842; Marks@uw-isdl.ee.washington.edu*

December 6, 1988

Dr. Kwan Fai Cheung
Department of Electronic Engineering
City Polytechnic of Hong Kong
Tat Chee Avenue
Kowloon Tong, Kowloon
HONG KONG

Dear Kwan:

Some quick items:

1. I think you now should have all the information you need for the Nanjing conference. If not, let me know.

2. Attached is a faculty opening announcement.

3. A copy of the Stark spiral sampling theorem paper is enclosed.

Take care my friend!

Sincerely,

Robert J. Marks II
Professor

RJM:cc

Enclosures

# FACULTY POSITIONS IN OPTICS

The Department of Electrical Engineering at Texas Tech University has tenure track and visiting faculty positions open. A Ph.D. is required. A variety of optics-related topics are under investigation. Subject areas of interest include:

- Programmable Optical Neural Networks
- Accuracy Limitations in Optical Computing
- Programmable Optical Interconnections
- Simulations of Neural Networks
- Photorefractive Optics
- Fractal Analysis of Image Texture
- 3-D and Stereo Imaging / Computer Vision
- Image Matching Algorithms
- Infrared Image Analysis

These research activities are located in well equipped laboratories for optical signal processing and digital image processing. Research equipment for optical processing includes a variety of both laser and incoherent light sources, optical tables, spatial light modulators, detector arrays, and electronic instrumentation equipment. Image processing hardware consists of a Megavision/Sun Microsystems image processing system, microcomputer based image processing systems and an image color hardcopy unit. Current faculty with research interests in optics include Professors John Walkup, Thomas Krile, Sunanda Mitra, and Marion Hagler.

For further information contact:

Dr. John F. Walkup , Director
Optical Systems Laboratory
Department of Electrical Engineering
Texas Tech University
Box 4439
Lubbock, TX 79409-3102

Phone: 806-742-3500 (JW)
        806-742-3465 (Secty)

# Texas Tech University

Optical Systems Laboratory
Department of Electrical Engineering/Computer Science

November 21, 1988

Dr. Robert J. Marks II
Dept. of Electrical Engineering
University of Washington
MS FT-10
Seattle, WA 98195

Dear Bob:

We are currently looking to add a faculty member in the Optical Systems Laboratory of the Department of Electrical Engineering at Texas Tech University. I am writing in the hope that you may want to recommend one of your current, or former, Ph.D. students for this position (Assistant or Associate Professor level).

The attached announcement describes some of our current research interests and facilities. We are specifically interested in an individual who has good optics laboratory skills, a potential simultaneous interest in optical computing and image processing and a willingness to both teach and actively pursue the development of a funded research program.

If you want to recommend this position to a current/former Ph.D. student of yours, please suggest they call me at (806) 742-3500 and send me their resume with the names of three references. Thanks for your assistance in making this faculty opportunity known.

Sincerely,

John F. Walkup
P. W. Horn Professor
Director, OSL

Enclosure

Lubbock, Texas 79409-4439/(806) 742-3465

香港城市理工學院
**City Polytechnic of Hong Kong**
九龍旺角彌敦道七零零號旺角中心第二座
電話：三，九八四三二一
Argyle Centre, Tower II
700, Nathan Road, Mongkok, Kowloon, Hong Kong
Cable: CITYPOLYHK  Telex: 39369 CPOLY HX
Phone: 3-984321

Director: Dr David Johns

Your ref:

Our ref:

Kwan F. Cheung
Dept. Electronic Engineering
City Polytechnic of Hong Kong
Tat Chee Avenue
Kowloon Tong, Kowloon
Hong Kong

November 23, 1988.

Prof. Robert J. Marks II
Dept. Electrical Engineering
FT-10 Univ. of Washington
Seattle, Wa 98195.
U.S.A.

Dear Bob,

I Faxed a letter to you last week concerning about the NanJing Conference. I hope you've already received it. That letter was given to a secretary here and it occurs to me she might have dialed the wrong number. Therefore, I rewrite the letter to you.

I'm working on the paper work of applying for travelling grant to Mainland China to attend the Nanjing Conference. In order to fill out the travelling grant application form, I need the following information: Exactly where (at an institution or in a hotel etc.), exactly when, the sponsoring agency (e.g. IEEE CAS Society) and others. If possible, I hope you can send me a copy of the brochure of the conference to me.

I've already finished the second paper, titled "A multi-dimensional extension of Papoulis Generalized Sampling Expansion". The problem is I can't find a printer at CPHK nor anywhere to print a hard copy. We, at this stage, can only get a HP LaserJet II. Since Egg requires a special font cartridge to print Egg files, and the City Polytechnic HK does not have this cartridge. At first, I thought it may be OK to send you a rough draft copy from my dot matrix printer and a file disk for you to print the paper on your AppleLaser printer. However, given my impression of Egg, it may not be a good idea. Therefore, I decided to retype the paper in PCTEX format. (Actually, I am using LATEX which is a derivative of the PCTEX. LATEX is much more easier to use.) The reason is that for minor changes, may be you can let Cindy or someone at the Department to do the change. I'm sure there are a lot of PCTEXpert out there at UW. One of them I know of is Mr. S.H. Lou, a Ph.D. student of Prof. Tsang. I'll send you a copy of the paper, and a file disk which may need reformating for printing on

Your ref:

Our ref:

.ppleLaser printer.

The network at CPHK is not set up yet. Everything is so slow, so bureaucratic and so unefficient here.... Many words but no action. I'll work hard to get a network account myself.

I am thinking about Seattle all the time. Thinking about you and your kids, about the ISDL, about Cindy....The good news is the U.S. Counsulate General in Hong Kong had just advanced my quota by about fourteen months to August 1, 1985. My quota is at Sep 21, 1987.

Tell Cindy I'm enjoying PCTEX. In particular, the LATEX is quite easy to learn. What she needs is to go to the U. Bookstore and but a LATEX manual. It costs around $25.00. The whole system of PCTEX is available for around $500.00 on the street. Yet is totally free for the UW community because UW bought the site license from the company. What you need (if you haven't) to do is get 45 blank DSDD floppy diskettes. Format them and take them to the microcomputer show room, located at the 4th floor of Smith Hall. Show the ID and ask for the PCTEX and copy the whole system. That's it. You may need a PCTEXpert to install the system on an IBM computer, like the one Cindy is using. PCTEX may take up as much as 15MB on a hard drive. Which should not be a problem for Cindy's system, which has a 70MB drive. Believe me, PCTEX is really powerful for writing technical papers and even books. An yet easy to learn.

Say hello to everyone, ask if Jim is enjoying my bike. Hope to see you all soon.

Regards

Cheung Kwan Fai

# UNIVERSITY OF WASHINGTON
### SEATTLE, WASHINGTON

*Interactive Systems Design Laboratory*
*Department of Electrical Engineering, FT-10*
*Telephone: (206) 543-6990, 543-6061 or 543-2150*
*FAX: (206) 543-3842; Marks@uw-isdl.ee.washington.edu*

December 5, 1988

Prof. Branko Souček
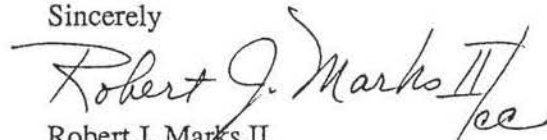Vijenac 3
41000 Zagreb
YUGOSLAVIA

Dear Prof. Soucek:

Thank you for your recent query. As you have requested, I have forwarded the request to Dr. Dziem at the Boeing High Tech Center. Enclosed is a signed copy of the agreement you sent.

The paper which you reference has been expanded to the enclosed manuscript that has recently been accepted for publication in **IEEE Transactions on Circuits and Systems**. Please feel free to use it in the same manner as the other.

Please keep us informed on the development of your work. It sounds like quite a project.

Thank you for the interest in our work.

Sincerely

Robert J. Marks II
Professor

RJM:cc

cc: Atlas, Oh and Ritcey

Enclosures

Robert J. Marks II
Interactive Systems Design Laboratory
Mail Stop FT-10
University of Washington
Seattle, WA 98195
USA

Nov. 1988

I am presently preparing a manuscript for a book tentatively
titled NEURAL AND CONCURRENT REAL-TIME SYSTEMS
which will consist of approximately 300 pages and will be pub-
lished by John Wiley & Sons, Inc. I would like to include the following
material which originally appeared in R.J. Marks II et al, The Performance of Convex
Set Projection Based Neural Networks, published by you in 19___.
in D.Z. Anderson ed., Neural Inf. Proc. Syst., Am. Inst. of Physics, New York 1988, 534-543

Introduction (Advantages a, b, c, d)

It is my understanding that you have the rights to this material.
I therefore request your permission to include this material in the
original and all subsequent editions of my book and in all foreign
language translations published by John Wiley & Sons, Inc. or its
licensees.

Please indicate your agreement by signing and returning the
enclosed copy of this letter. In doing so, please supply me with the
appropriate credit and/or copyright notices which should appear with
this material.

If you do not control these rights, I would appreciate your
letting me know with whom I should so communicate.

Thank you for your cooperation.

Sincerely yours,

Branko Souček

Prof. Branko Souček
Vijenac 3
41000 Zagreb, Yugoslavia

AGREED TO AND ACCEPTED:

By _____ 12/2/88
                              Date

CREDIT AND/OR COPYRIGHT NOTICES:

1734

COPY ATTACHED FOR YOUR CONVENIENCE

# UNIVERSITY OF WASHINGTON
## SEATTLE, WASHINGTON

*Interactive Systems Design Laboratory*
*Department of Electrical Engineering, FT-10*
*Telephone: (206) 543-6990 or 543-6061*

November 7, 1988

Dr. Kazuyoshi Tsutsumi
Division of System Science
The Graduate School of Science and Technology
Kobe University
Rokkodai, Kobe 657
JAPAN

Dear Dr. Tsutsumi:

Thank you for your interest in our neural network research program.

We are seriously considering submitting your name as a visiting scholar in our program. First, however, we want to be assured you are still interested in a position here. Also, our current resources are limited. Are there any resources that could be awarded by your institution beyond your personal support? Any additional support of our research effort would be deeply appreciated.

I look forward to your response.

Sincerely,

Robert J. Marks II
Professor

RJM:cc

cc: Les Atlas

University of Washington Correspondence

# INTERDEPARTMENTAL

October 25, 1988

TO:       Research Faculty

FROM:   Stockroom

SUBJ:   Resource Allocation

The expenditures for departmental toilet paper have escalated beyond the projected biennial allocation by the College of Engineering. There has clearly been an abuse of the privilege of access by research faculty who have used the resource while conducting research. Such resource should, rather, be charged to research budgets.

Effective immediately, the subject material resource will be distributed at the reception desk in the main office. A tally sheet will be kept for apropriate debiting of appropriate accounts which, by decree, will be determined by the faculty's current activity. Recognizing that each of us will require some resource allocation, your ration for the month of November is attached.

Your cooperation in the execution of this policy will help greatly in this gross misuse of departmental funds.

# UNIVERSITY OF WASHINGTON
### SEATTLE, WASHINGTON

*Interactive Systems Design Laboratory*
*Department of Electrical Engineering, FT-10*
*Telephone: (206) 543-6990 or 543-6061*

October 20, 1988

Dr. Ronald B. Melton
Manager, Information Management
   and Analysis
Battelle Pacific Northwest Laboratories
Battelle Boulevard
Richland, WA 99352

Dear Ron:

Thank you for a delightful visit! I am enthusiastic concerning some sort of future collaboration. You and Roger have been placed on our seminar announcement mailing list. I hope you can attend some that are of interest to you.

In our discussions, there was some mention made of the capacity of the Hopfield neural network. (Maybe the discussion was with Roger.) Enclosed are some papers which should shed some more light on this.

If some of my probing proves successful, I'll be contacting you concerning a more concrete plan for some sort of joint effort.

Best personal regards,

Robert J. Marks II
Professor

RJM:cc

Enclosures

October 7, 1988


Dr. Robert Marks
Department of Electrical Engineering
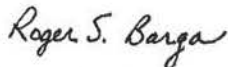University of Washington
Seattle, Washington 98195

Dear Dr. Marks:

We enjoyed your presentation at Battelle's Neural Networks Workshop and the opportunity to discuss possible future interactions between Battelle Northwest and the University of Washington. We are enthusiastic about the opportunities for us to collaborate on research in the future. On the second day of the workshop an executive summary of DARPA's Neural Network Study was distributed. I thought you might find this report interesting so I have enclosed a copy.

I am certain the involvement between the University of Washington and Battelle Northwest will benefit both our neural network research programs, and this is also a valuable opportunity for me as I prepare to pursue the PhD. I welcome any information on your program and research opportunities for a PhD candidate as they arise.

I have enclosed my business card, so please feel free to contact me if you wish to discuss any interests in neural networks or have any literature you wish to share. Thank-you again for your presentation at our workshop.

Sincerely,

Roger S. Barga

Roger S. Barga
Knowledge-Based Systems Group
Computational Sciences Department

# UNIVERSITY OF WASHINGTON
### SEATTLE, WASHINGTON 98195

*Department of Electrical Engineering, FT–10*
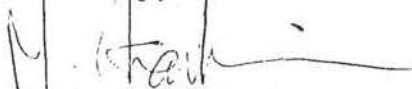*Telephone: (206) 543–2150*

March 28, 1988

Mr. Gary Stemler
Bonneville Power Administration
P. O. Box 491
Vancouver, WA  98666

Dear Gary:

Enclosed please find a copy of our proposal submitted to NSF on "Power System Stability and Security Assessment Using Artificial Neural Network".

I would like to thank you for your encouraging comments during the process of writing this proposal.  I shall let you know the outcome of the review.

Sincerely,

M. A. El-Sharkawi
Associate Professor

cc:  Professor M. J. Damborg
     Professor  R. Marks

# UNIVERSITY OF WASHINGTON
## SEATTLE, WASHINGTON 98195

*Interactive Systems Design Laboratory*
*Department of Electrical Engineering, FT-10*
*Telephone: (206) 543-6990 or 543-2150*

March 18, 1988

Marc J. Anderson
Weyerhaeuser Technology Center
WTC-1B20
32901 32nd Drive South
Federal Way, WA 98003

Dear Marc:

Thank you for your interest in our work. Per your request, copies of some of our papers on artificial neural networks are enclosed. I hope they are of use to you.

In your letter to Mr. Park, you mentioned an interest in meeting with us. We openly welcome the opportunity of meeting with you and discussing our mutual interest. I will be phoning you shortly to continue our interlocution.

Sincerely,

Robert J. Marks II
Professor

cc: Les Atlas
    Ed Stear

**Weyerhaeuser Company**

Tacoma, Washington 98477
(206) 924-2345

WTC-1B20

March 14, 1988

D.C. Park
Interactive Systems Design Lab
Dept. of Electrical Engineering, FT-10
University of Washington
Seattle, WA 98195

Dear Mr. Park:

Myself and a handful of my colleagues here at Weyerhaeuser have recently become interested in possible uses of neural networks as applied to certain classes of problems. Although, at this point, this interest is mainly of a technology awareness nature rather than for any immediate application.

It has recently come to my attention that there is a great deal of work in this area being done at the University of Washington in the Interactive Systems Design Lab. It would be very useful to me and Weyerhaeuser in general if it were possible for me to keep abreast of the research being done at ISDL.

With this as my motive, the reason for my correspondence is two-fold. First, I would like to request reprints or preprints of several articles written by people at ISDL. And secondly, after reviewing these articles in order to become acquainted with the work at ISDL, I would like to arrange a meeting with Dr. Atlas and Dr. Marks (and others) to discuss their research.

First of all, a list of articles I would like to receive copies of:

J.G. McDonnel, R.J. Marks II and L.E. Atlas, "An introduction to neural networks for solving combinatorial search problems," **IEEE Expert**, (in press).

R.J. Marks II, L.E. Atlas and K.F. Cheung, "Optical processor architectures for alternating projection neural networks," (in review).

K.F. Cheung, R.J. Marks II and L.E. Atlas, "Neural net associative memories based on convex set projections," **Proceedings of the IEEE First International Conference on Neural Networks**, San Diego, June 1987.

R.J. Marks II, S. Oh, L.E. Atlas and J.A. Ritcey, "Alternating projection neural networks," **ISDL Report 11587** (submitted for publication to **IEEE Trans. CAS**)

After I have had time to read these articles, I will contact Dr. Atlas and Dr. Marks personally to discuss arrangements for a meeting if they are agreeable to that idea.

These articles should be sent to:

> Marc J. Anderson
> Weyerhaeuser Technology Center
> WTC-1B20
> 32901 32nd Drive South
> Federal Way, WA 98003

If there are any questions that you might have, I can be reached at (206) 924-6175.

I appreciate the time and effort required to fill my request.

Sincerely,

Marc J. Anderson