



International Association for Pattern Recognition, Inc.

An affiliate member of the International Federation for Information Processing

NEWSLETTER

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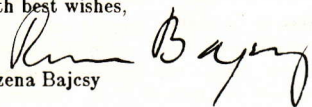
November 1984

FROM THE EDITOR'S DESK

Dear Colleagues,

This is my farewell message as the editor of the IAPR Newsletter, since I am happy to report that **Professor Anthony Reeves** of the *Electrical Engineering Department, Cornell University, Ithaca, New York 14853, USA* has agreed to take over this job. I took the editorship of this newsletter as a service to the IAPR community. I am a member of this community and I do feel that I personally, and we collectively, are responsible for the future of the fields of Pattern Recognition, Computer Vision and Machine Perception. The IAPR Newsletter is a forum for expressing these concerns and perhaps putting forward some of our ideas and biases. This is how I used the editorial space. The newsletter gave me an opportunity to get to know many of you, learn about your work, your hopes and your frustrations. I am grateful for all the knowledge that I gained this way, but now is the time for doing something else. If any of you pass through Philadelphia please come and visit!

With best wishes,


Ruzena Bajcsy

INTERNATIONAL ASSOCIATION FOR PATTERN RECOGNITION

EXCERPTS

The Minutes of the Governing Board and the Executive Committee Meetings held this summer in Montreal, as well as the report 'Experiences from the Technical Committees', are presented here in abbreviated form. Complete copies of each group's Minutes are available from my successor to the Newsletter Editorship, *Anthony Reeves*.

Minutes of the Fourth Meeting of the Governing Board of IAPR

Hotel Queen Elisabeth, Montreal, P.Q. Canada
1 August 1984

Present were: Simon (Pres.), Kohonen and Nagao (Vice Pres.), Rosenfeld (Past Pres.), Devijver (Secty.), Freeman (Treas.), Marko and Levine (Chmn, 6th and 7th ICPR), Danielsson, Eklundh, Ullmann, Backer, Guzman, Kropatch (sub for Leberl), Kasvand, Chang, Haton, Chetverikov (sub for Kohonen), Dutta Majumder, Peleg, Cantoni (sub for Levialdi), Takagi, Lopez de Mantaras, Fu, Watanabe (national representatives), Swane, Bajcsy (Newsletter Ed.), Tanimoto (Observer).
Note: Kohonen also serves as a substitute for Becker.

Opening:

Simon opens the meeting at 08.10 am and welcomes the audience.

Installation of New Members of the Governing Board

- *Ullman* succeeds *Rutovitz* as the representative from the UK. The membership of Sweden has grown to over 200 and *Eklundh* was designated as second national representative. *Simon* installs *Ullmann* and *Eklundh* as new members of the Governing Board.

Membership

- *Danielsson*, Chairman of the Membership Committee, comments on his written report. He recalls that since the last Governing Board meeting an application for membership from *Hungary* was processed by his committee and approved by mail

ballot. He comments on his unsuccessful attempts to get *East Germany* to join in spite of the existence of an active national organization. He and *Simon* report on various contacts with *USSR*. *Simon* made a one month trip to *USSR*, had numerous contacts which resulted in a verbal declaration by the Scientific Attache in Paris that *USSR* would soon join *IAPR*. However, afterwards nothing materialized. Invitations sent to four *USSR* Scientists to attend the *IAPR* Governing Board meeting in *Montreal* were either declined or ignored.

- *Danielsson* reports that an application for membership from *Norway* has been approved by both the Membership Committee and the Executive Committee. It is moved and unanimously approved to accept the "Norwegian Society for Image Processing and Pattern Recognition" as a new member of *IAPR* with *Dr. Eric Swane* as a new member of the Governing Board.

- *Note:* From this time on, in all voting matters, a majority of more than 50% amounts to 14 votes.

Amendments to the Constitution

Three proposals for changes in the *IAPR* Bylaws are available from *Freeman*.

- **Proposal 1** suggests a change in the wording of Subsection 7.2 to state that dues will be paid either in US dollars or in bank drafts negotiable on a USA bank. The purpose is to avoid the various taxes affecting international transactions.

The second part of **Proposal 1** suggests that category A dues be a fixed sum of \$100, instead of the "per member" amount as at present. *Ullman*, *Guzman* and *Kropatsch* do not support the proposal on the ground that the "per member" amount for small (25) and large (200) category A organizations will then differ by a factor close to 10. *Danielsson* suggests that for what concerns annual dues category A organizations should be split into categories A1 with a membership of 25 to 75, and A2 with a membership of 76 to 200 with dues of \$50 and \$100, respectively. A motion to put this amendment on the agenda is approved by more than two third of the members present—as required by Article 12.1 of the Bylaws.

Under these provisions, proposal 1 is accepted unanimously.

- **Proposal 2** concerns an increase in annual dues to \$50, \$120, \$260 and \$1200 for categories A1, A2, B and C, respectively, and \$15 for individual members. *Peleg* questions the need for such an increase at a time when *IAPR* is in good financial shape. *Freeman* replies that for a non-profit organization, it is essential that enough of our profit should come from members to preserve our right to tax exemption. **Proposal 2** is approved unanimously.

- **Proposal 3** is a new statute and suggests allowing subscription to the *IAPR* Newsletter at a fee equal to the individual membership fee. This proposal is also approved unanimously.

- *Freeman* points out that according to Section 4.6 of the Constitution the terms of office of the President, Vice-Presidents and Secretary shall be four years at most. He remarks that as this provision does not apply to the Treasurer it should not apply to the Secretary either. He also insists that keeping the Secretary in charge for longer periods would be beneficial to continuity in the handling of *IAPR* matters. *Devijver* comments that action taken by the Secretary can be quite influential in the way *IAPR* matters are conducted and that a regular turnover would be preferable. Both the motion to put this amendment on the agenda and the amendment itself are approved.

- It is further moved and approved...to extend the obligation of returning 10% of the gross registration receipts at *ICPR* Conferences to receipts from tutorials, workshops and exhibits held in connection with the conference. This is a change to the Statute.

- A motion proposed by *Freeman* and concerning his selection of an Accounting Firm and Attorney (to assist the Treasurer in the handling of legal matters) is approved unanimously.

Technical Committees

- *Kohonen* surveys the history of Technical Committees...(see his report following these Excerpts). It is moved and approved...to change the names of four committees:

1. TC2: Structural and Syntactical Pattern Recognition
2. TC5: Benchmarking and Software
3. TC9: Biomedical Pattern Recognition
4. TC12: Automatic Speech Recognition

Conference Committee Chairman's Report

- *Marko* reports that out of the six applications that were submitted for the site of the 9th *ICPR*, namely *Peking*, *Honolulu*, *Seattle*, *New Delhi*, *Amsterdam*, and *Lausanne*, the first four only have been taken into consideration, and the first three are recommended by his committee for selection by the Governing Board on the basis of the information provided by the applicants.

Watanabe (for *Honolulu*), *Tanimoto* (for *Seattle*) and *Change* (for *Peking*) are invited to present their respective proposals and *Dutta Majumder* (for *New Delhi*) withdraws his. *Danielsson* argues, in a quite convincing manner, that a decision to select *Peking* should be interpreted as an encouragement from *IAPR* to a young but important scientific community, and a timely return to Asia. The selection of the site for the 1988 conference is then decided by secret ballot. The results are **Peking: 18 votes, Honolulu: 7 votes, Seattle: 4 votes.** *Chang* then expresses his thanks to the Governing Board.

Nominating Committee Chairman's report

- *Rosenfeld* presents the slate of nominees selected by his committee, all of whom have agreed to serve: President: *Kohonen* and *Sakai*, Vice-Presidents: *Devijver* and *Paulidis* (in that order), Secretary: *Duff*, Treasurer: *Freeman*. *Simon* invites nominations from the floor and suggests *Lopez de Mantaras* for the office of Secretary. *Lopez de Mantaras* does not wish to be a candidate.

Sakai is elected... As there is only one candidate for every other office, the remaining slate of officers is decided upon by a hand vote and accepted unanimously.

New Nominating Committee

- As recommended by the Executive Committee, it is moved and unanimously approved that the new nominating committee shall consist of *Simon*, *Levine*, *Nagao*, *Danielsson*, *Bajcsy* and *Kazmierczak*.

Closing:

Simon adjourns the meeting at 12.10 pm.

Respectfully submitted,
Pierre A. Devijver
Secretary

Minutes of the Executive Committee Meeting

Queen Elizabeth Hotel
Montreal, Canada
2 August 1984 at 12:30 pm

Present: Prof. T. Sakai (Pres. IAPR and Chmn.), Dr. P.A. Devijver (First V.P.), Dr. T. Pavlidis (Second V.P.), Prof. H. Freeman, Prof. M.D. Levine (Chmn. 7th ICPR), Prof. J-C Simon (Chmn. 8th ICPR), Prof. R. Bajcsy (Newsletter Ed.), Dr. M.J.B. Duff (Secty.)

President's Remarks

- Prof. Sakai discussed his introduction to speech recognition (through difficulties in singing), to machine translation (through difficulties in speaking English) and to human face recognition (through difficulties in recognizing and remembering people). He went on to stress the importance of the emergent technologies of expert systems, knowledge-based processing and VLSI, and looked forward to the rapid introduction of theoretical pattern recognition methods in industry and other practical fields. He also stressed the importance of IAPR in encouraging this process.

The President thanked the Committee and closed the meeting at approximately 2:30 pm.

Experiences from the Technical Committees

Teuvo Kohonen

The Governing Board of IAPR, at its third meeting on October 19, 1982 which was held in Munich, Germany, established twelve Technical Committees for specific fields or purposes of Pattern Recognition. These committees are (henceforth) abbreviated TCs... These TCs operate under the supervision of one of the Vice Presidents of IAPR. Although they were meant for an important form of permanent activity outside the biannual international conferences (ICPR), it seems that they were received with mixed feelings...; my report only covers the period 1982-1984 prior to 7 ICPR.

First of all it should be understood that the TCs not only work for a two-year mandate, but they are supposed to exist as long as new tasks appear. The officers can only be appointed for two consecutive mandates. The TCs are established and resolved by the Governing Board of IAPR, the chairmen are appointed by the President of IAPR, and the committee members are nominated by the chairmen. The TCs, nonetheless, are by no means meant for exclusive clubs of renowned scientists, but anyone who feels that his or her ideas should be advanced within this framework of activity should write to one of the chairmen or to the executives of IAPR about the acceptance of new members. We have already a rather peculiar situation that the number of members in the TCs varies from five to 75. It was all the time felt, however, that the TCs and their chairmen should be given free hands in order that IAPR finds the best procedures based on a broad experience.

The biggest problem, as always, is money. (The yearly allotment) must only be understood as... "seed money"... An intriguing problem has arisen: whether the TCs are allowed to have a treasury of their own, or whether any surplus gained from the meetings should go back to IAPR. This question has not been settled

completely, and you will find some of the decisions in the Statutes attached to the most recent version of the Constitution and Bylaws accepted in Montreal. My personal feeling is that if the TCs are able to use a national or professional organization as an "umbrella" for their meetings, they can use the name of IAPR as a co-sponsor without any financial obligations, whereas if IAPR lends money, the situation is more complex; at least the sum must be reimbursed immediately after the specified meeting. It is highly suspicious if a group of private persons, or the chairman only, keeps a treasury which receives public money. Although none of us is hopefully a crook, we might run into difficulties with the Internal Revenue Office.

The financial problems are also reflected in a difficulty of holding meetings of the TCs outside the biannual international conferences. There is no travel money in the budget of IAPR available for this purpose. On the other hand, it may not be necessary that every TC meeting constitutes a quorum. In fact, the chairman, together with a couple of members, may meet anywhere, say during regional conferences. It would be highly desirable, however, that minutes are held of every such meeting and distributed to the members of the respective TC, as well as to the Secretary of IAPR. The modern communication methods should be utilized whenever possible. (Do not forget the telex!).

What about the content of scientific work... To (the types of activity that have already been run or suggested: workshops, satellite symposia, tutorials, special issues of journals, among others), I would like to add the development of standard terminology, possibly in the form of polyglot dictionaries, and stimulating the writing of state-of-the-art reports. The IAPR Newsletter, and six pages of every issue of PRL are available to reports from the TCs. Professor Marko has recently made a very interesting suggestion: a special session, including panel discussions and "hearings" should be provided to every international conference to report the activities of the TCs.

If all the above wishes materialize, it seems that we have created a very good instrument for our purposes.

Teuvo Kohonen
Past First Vice President of the IAPR

Report of Activities of Technical Committee 7: Applications in Remote Sensing

Chairman: *M. Goldberg*, Dept. of Electrical Engineering
University of Ottawa, Ottawa, K1N 6N5, Canada

The IAPR Technical Committee TC7 has chosen as its main activity the promotion of research on Multisensor and Multitemporal Data Integration. As such, the first activity was the sponsorship of a Workshop on this theme hosted by *Dr. D.G. Goodenough* of the Canada Centre for Remote Sensing and held in Ottawa on July 25-27.

At its first meeting, held during the 7th ICPR in Montreal, the committee approved the creation of a set of Multitemporal and Multisensor Test Data, which can be used to benchmark algorithms. This data set would be made available to researchers at a nominal cost. A first data set, consisting of both satellite and airborne multispectral and microwave imagery, together with extensive ground truth information will be contributed by the Canada Centre for Remote Sensing.

An initial Workshop of interested parties is scheduled for Purdue University on June 24, 1985, prior to the LARS Remote Sensing Symposium. A second Workshop is planned in conjunction with the 8th ICPR to be held in Paris, France in October 1986, where preliminary results will be presented. It is anticipated that a special issue of some remote sensing journal will be devoted to presenting results obtained by different researchers using the collected data set.

For information contact:

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Canada Centre for Remote Sensing
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IAPR DIRECTORY

20 June 1984¹**Members of the Governing Board**

Austria	<i>Prof. F. Leberl</i>
Belgium	<i>Dr. P.A. Devijver</i>
Canada	<i>Dr. T. Kasvand</i>
People's Republic of China	<i>Prof. T. Chang</i>
Denmark	<i>Prof. P.W. Becker</i>
Federal Republic of Germany	<i>Prof. H. Kazmierczak</i> <i>Prof. H. Marko</i>
Finland	<i>Prof. T. Kohonen</i>
France	<i>Prof. J-C. Simon</i> <i>Prof. J-P. Haton</i>
Hungary	<i>Dr. G. Kozman</i>
India	<i>Prof. D. Dutta Majumder</i>
Israel	<i>Dr. S. Peleg</i>
Italy	<i>Prof. S. Levialdi*</i>
Japan	<i>Prof. T. Nagao</i> <i>Prof. M. Takagi</i>
Mexico	<i>Prof. A. Guzman</i>
Norway	<i>Prof. E. Swane</i>
The Netherlands	<i>Prof. E. Backer</i>
Spain	<i>Prof. R. Lopez de Mantaras</i>
Sweden	<i>Prof. J.-O. Eklundh*</i>
Switzerland	<i>Prof. M. Kunt</i>
United Kingdom	<i>Prof. Ullmann*</i>
USA	<i>Prof. H. Freeman</i> <i>Prof. K.S. Fu</i> <i>Prof. A. Rosenfeld</i> <i>Prof. M.S. Watanabe</i>

Executive Committee*

President	<i>Prof. T. Sakai (Japan)</i>
First Vice-Pres.	<i>Dr. P.A. Devijver (BE)</i>
Second Vice-Pres.	<i>Dr. T. Pavlidis (USA)</i>
Past-President	<i>Prof. J-C. Simon (Fr)</i>
Secretary	<i>Dr. M.J.B. Duff</i>
Treasurer	<i>Prof. H. Freeman (USA)</i>
Past-Chm 7ICPR	<i>Prof. M. Levine (Ca)</i>
Chairman 8ICPR	<i>Prof. J-C. Simon (Fr)</i>

Standing Committees**Conference Committee**

Prof. H. Marko (FRG) Chm.
Prof. T. Chang (PRCh)
Prof. J-P. Haton (Fr)
Prof. J. Nagumo (Japan)
Dr. T. Pavlidis (USA)

¹The present version of the directory incorporates the changes that have taken place since 1 February 1984, and includes those changes which arose out of the fourth meeting of the Governing Board of IAPR, held this summer in Montreal, as far as this information is available. These latter changes are marked with an '*'.

Membership Committee

Prof. P-E. Danielsson (Sw) Chm.
Dr. P.A. Devijver (Be)
Prof. H. Kazmierczak (FRG)
Prof. F. Leberl (Austria)

Nomination Committee*

Prof. J-C. Simon (Fr)
Prof. M. Levine (Ca)
Prof. M. Nagao (Japan)
Prof. P-E. Danielsson (Sw)
Prof. R. Bajcsy (USA)
Prof. H. Kazmierczak (FRG)

Newsletter Editor*

Anthony Reeves (USA)

Corresponding Editors

Prof. E. Backer (For Europe)
Prof. M. Nagao (for Japan)

Ad Hoc Committees**Awards**

Prof. D. Rutovitz (UK) Chm.
Prof. Y.T. Chien (US)
Prof. P-E. Danielsson (Sw)
Dr. T. Kasvand (Ca)

Publicity and Education

Prof. E. Backer (NI) Chm.
Prof. R. Bajcsy (USA)
Prof. S. Castan (Fr)
Dr. P.A. Devijver (Be)
Prof. G. Granlund (Sw)
Prof. M. Kunt (Sw)
Prof. M. Levine (Ca)
Prof. S. Levialdi (It)
Prof. L. Shapiro (USA)
Prof. G. Toriwaki (Japan)

Constitution and Bylaws

Prof. H. Freeman (USA) Chm.
Dr. P.A. Devijver (Be)
Prof. K.S. Fu (USA)
Prof. T. Sakai (Japan)

Long Range Planning

Prof. A. Guzman (Mexico) Chm.
Prof. V. Cantoni (It)
Dr. O. Faugeras (Fr)
Dr. J. Kittler (UK)
Prof. R. Lopez de Mantaras (Spain)
Prof. H. Nagel (FRG)
Prof. S. Peleg (Israel)

Technical Committees*

Dr. P.A. Devijver (Be)

National Member Organization

Austria	Austrian Working Group for Pattern Recognition of the Austrian Computer Society, and the Austrian Association for Cybernetics Category A. About 40 members Representative: <i>Prof. F. Leberl</i>
Belgium	Pattern Recognition Contact Group of the SOGESCI Category A. About 25 members Representative: <i>Dr. P.A. Devijver</i>
Canada	Canadian Image Processing and Pattern Recognition Society Category A. About 175 members Representative: <i>Dr. T. Kasvand</i>

- People's Republic of China** Pattern Recognition and Machine Intelligence Committee of the Chinese Association of Automation
Category A. About 25 members
Address: Prof. Hu Qi Heng, Institute of Automation, Academia Sinica, Beijing (Peking) China
Representative: *Prof. T. Chang*
- Denmark** Danish Pattern Recognition Society
Category A. 31 members
Representative: *Prof. P.W. Backer*
- Federal Republic of Germany** Deutsch Arbeitsgemeinschaft fur Mustererkennung
Category B
Representatives: *Prof. H. Kazmierczak*
Prof. H. Marko
- Finland** Pattern Recognition Society of Finland
Category A. 119 members
Representative: *Prof. T. Kohonen*
- France** Pattern Recognition and Artificial Intelligence Group of AFCET (Association Francaise pour la Cybernetique Economique et Technique)
Category B.
Representatives: *Prof. J-P. Haton*
Prof. J-C. Simon
- Hungary** Section of Artificial Intelligence and Pattern Recognition of the John Von Neuman Society for Computer Science
Category A.
Representative: *Dr. G. Kozman*
- India** Indian Unit for Pattern Recognition and Artificial Intelligence (IUPRAI)
Category A.
Representative: *Prof. D. Dutta Majumder*
- Israel** The Israel Working Group on Pattern Recognition and Image Processing of the Information Processing Association of Israel
Category A.
Representative: *Dr. S. Peleg*
- Italy** Working Group for Pattern Recognition of the Italian Association for Automatic Computation
Category A. About 50 members
Representative: *Prof. S. Levialdi*
- Japan** Audio-Visual Information Research Group (AVIRG)
Category B. 279 members
Address: Dr. K. Ozeki, NHK Tech. Res. Lab. 1-10-11, Kinuta, Setagaya-ku, Tokyo 157, Japan
Representatives: *Prof. T. Nagao*
Prof. M. Takagi
- Mexico** Chapter on Pattern Recognition and Image Processing from the "Asociacion Mexicana de Ingenieros en Comunicaciones Electricas y Electronica" (AMICEE)
Category A. 20 members
Representative: *Prof. A. Guzman*
- Norway** Norwegian Society for Image Processing and Pattern Recognition
Category A. 51 individual members, 22 industrial members
Representative: *Prof. E. Swane*
- The Netherlands** Nederlandse Vereniging voor Patroonherkenning en Beeldverwerking
Category A. About 90 members
Representative: *Prof. E. Backer*
- Spain** The Spanish Working Group for Pattern Recognition of the CEA-IFAC
Category A.
Representative: *Prof. R. Lopez de Mantaras*
- Sweden** Svenska Sallskapet for Automatiserad Bildanalys (SSAB), (Swedish Society for Automated Image Analysis)
Category A. About 120 members
Representative: *Prof. J.-O. Eklundh*
- Switzerland** The Swiss Association for Pattern Recognition
Category A.
Representative: *Prof. M. Kunt*
- United Kingdom** British Pattern Recognition Association
Category A. 81 members
Representative: *Prof. Ullmann*
- USA** IEEE Computer Society
Category C. About 3000 members
Representatives: *Prof. H. Freeman*
Prof. K.S. Fu
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**JAPANESE DOMESTIC ACTIVITIES
IN PATTERN RECOGNITION
AND IMAGE PROCESSING**

**Institute of Electronics and
Communication Engineers of Japan**

June 1984

- **Some Studies on the Absorption of Distortions for Handprinted Chinese Characters**, *Yoshio Izui, Hiroshi Harashima, Hiroshi Miyakawa*, Faculty of Engineering, The University of Tokyo
- **Online Character Recognition by Hierarchical Analysis Method**, *M. Yurugi, S. Nagata, K. Onuma, K. Kubota*, Data Processing Industries Group, OKI Electric Ind. Co., Ltd.
- **Online Recognition of Korean Characters**, *Taekyun Kim*, Chungnam University, Daejeon, Korea, *Takeshi Agui, Masayuki Nakajima*, Tokyo Institute of Technology, Yokohama
- **Pseudo-coding Method for Digital Contour Lines**, *Masayuki Nakajima, Takeshi Agui, Kazuki Sakamoto*, Imaging Science and Engineering Laboratory, Tokyo Institute of Technology, Yokohama
- **Study of an Urban Map Processing, Part 2: Extraction of Road Area by Parallel Vector Tracers**, *Masayuki Nakajima, Takeshi Agui, Hisato Iitsuka*, Imaging Science and Engineering Laboratory, Tokyo Institute of Technology, Yokohama
- **Feature Extraction of Stop Consonants by High Resolution Frequency Analysis**, *Tetsuya Harada, Hiroshi Kawarada*, Research Laboratory of Precision Machinery and Electrocnics, Tokyo Inst. of Technology
- **Non-stationary Analysis of the Local Non-stationary Model**, *Tohru Kiryu*, Dept. of Inf., Faculty of Engineering, Niigata Univ., and *Taizo Iijima*, Dept. of Computer Science, Tokyo Institute of Technology

July 1984

- **Handprinted Character Recognition Fitted to the Writer (I)**, *Hiroyuki Morita, Shinji Tsuruoka, Fumitaka Kimura, Yasuji Miyake*, Faculty of Engineering, Mie University
- **Modified Quadratic Discriminant Functions and the Application to Chinese Character Recognition**, *Fumitaka Kimura, Kenji Takashina, Shinji Tsuruoka, Yasuji Miyake*, Faculty of Engineering, Mie University
- **Real Time Range Measurement of 3-D Objects Using Slit-ray Projection**, *Osamu Ozeki, Tomoaki Nakano, Shin Yamamoto*, Toyota Central Research and Development Laboratories, Inc.
- **Chain-coding for Large Scale Line-drawings Based Upon Line-by-Line Method**, *Akira Nakayama, Yuuji Yoshida, Teruo Fukumura*, Faculty of Engineering, Nagoya University, *Fumitaka Kimura*, Faculty of Engineering, Mie University
- **Local Spatial Frequency of Image by Hilbert Transform**, *A. Iwata, K. Suzuki, N. Suzumura*, Nagoya Institute of Technology, *I. Horiba*, Hitachi Medical Co.
- **Region Extracting Methods Using Centers of Gravity of Divided Images**, *Tomoharu Nagao, Takeshi Agui, Masayuki Nakajima*, Tokyo Institute of Technology, Imaging Science and Engineering Lab.
- **Image Restoration by Modified Projection Filter**, *Yukihiko Yamashita, Hidemitsu Ogawa*, Faculty of Engineering, Tokyo Institute of Technology
- **A Mathematical Theory of Recognizing Patterns, Part II: Recognition-Abstraction and System of its Axioms and Theorems**, *Shoichi Suzuki*, Dept. of Management Information, School of Information, Bunkyo University

**The Information Processing Society of Japan:
Computer Vision**

March 1984

- **Architecture of Image Signal Processor (2)**, *Tadashi Fukushima, Yoshiki Kobayashi, Kohtaroh Hirasawa, Tadaaki Bandoh*, Hitachi Research Laboratory, Hitachi Ltd., *Siji Kashioka*, Central Research Laboratory, Hitachi Ltd., *Takeshi Katoh*, Omika Works, Hitachi Ltd.
- **Description of Weather Maps and its Application of Weather Map Database**, *Kazunori Yamamori, Yuuji Yoshida, Teruo Fukumura*, Faculty of Engineering, Nagoya University
- **Retrieval System of Contour Map Data Based Upon Their Structural Description**, *Masaki Muruyama, Yuuji Yoshida, Teruo Fukumura*, Faculty of Engineering, Nagoya University
- **Interpretation of Right-angled Polyhedra From Their Line Drawings**, *Ken-ichi Kanatani*, Dept. of Computer Science, Gunma University
- **Depth Recovery From a Perspective Drawing and Shape Information**, *Yukio Fukui*, Industrial Products Research Institute
- **Direct Estimation of 3-D Motion Parameters from Image Sequence and Depth**, *Masanobu Yamamoto*, Electrotechnical Laboratory
- **Stereo by Dynamic Programming Using Inter-scanline Consistency Constraint**, *Yuichi Ohta*, Univ. of Tsukuba, *Takeo Kanade*, Carnegie-Mellon University

May 1984

- **Camera-Blurring Detection System by Image Processing Method**, *Masayuki Nakajima, Takeshi Agui*, Tokyo Institute of Technology, *Kenji Nakauchi, Kazuo Yanagawa*, Fuji Photo Film Co.
- **A Method of Recovering Three-dimensional Structure and Motion of Jointed Objects from Orthogonally Projected Optical Flow**, *Tsutomu Shibata, Noboru Sugie*, Dept. of Information Science, Faculty of Engineering, Nagoya Univ.
- **Decomposition of Optical Flow Induced by Curved Paths of Observation into Rotational and Translational Components Using Local Operators**, *Hirotsada Kobayashi, Noboru Sugie*, Dept. of Information Science, Faculty of Engineering, Nagoya Univ.
- **On the Development of Small Scale Image Processing Systems and Some Applications**, *Hiroyasu Koshimizu*, Nagoya Municipal Industrial Research Institute
- **Algorithms for 3-dimensional Digital Image Processing**, *Shigeki Yokoi, Jun-ichiro Toriwaki*, Faculty of Engineering, Nagoya Univ.

July 1984

- **Automatic Recognition System for Logic Circuit Diagram**, *Toshio Matsuura, Shigemitsu Nagata, Kiyoshi Iwata, Masumi Yoshida*, Fujitsu Laboratories Ltd.
- **Metal Surface Shape from Photometric Stereo Method with Light Projection**, *Etsuji Nishino*, Matsushita Electric Industrial Co., Ltd., *Yoshiaki Shirai*, Electrotechnical Laboratory
- **Line Finding by Using Area Construction and Least Squares Fit**, *Takashi Tsubouchi, Yutaka Kanayama, Shin-ichi Yuta*, Univ. of Tsukuba, Sakura, Ibaraki
- **An Efficient and Flexible Analysis System of Engineering Drawings Using Dynamic Multi-dimensional Data Management Structure--AI-MUDAMS**, *Yutaka Ohsawa, Masao Sakauchi*, Tokyo University

- **Multi-purpose Image Processing System Using Multiprocessors, Part 1: Concept and Hardware Configuration**, Eiji Mitsuya, Hasuhito Suenaga, Yokosuka Electrical Communication Laboratory, N.T.T.
- **Multi-purpose Image Processing System Using Multiprocessors, Part 2: System Control Sequence and Software**, Eiji Mitsuya, Yasuhito Suenaga, Masashi Okudaira, Etsuo Kawada, Yokosuka Electrical Communication Laboratory, N.T.T.

Reprints

- **A Structural Analysis of Natural Textures by Fourier Transformation**, T. Matsuyama, S. Miura and M. Nagao, *Proceedings of the 6th International Conference on Pattern Recognition*, October 1982
- **Japanese-to-English Title Translation System, TITRAN--Its Outline and the Handling of Special Expressions in Titles**, Jun Ibuki Masako Kume, Makoto Nagao and Jun-ichi Tsujii, *Journal of Information Processing*, 6, 4, pp. 231-238 (1983)
- **Structural Analysis of Natural Textures by Fourier Transformation**, Takashi Matsuyama, Shu-ichi Miura, and Makoto Nagao, *Computer Vision, Graphics, and Image Processing* 24, 347-362 (1983)
- **A File Organization for Geographic Information Systems Based on Spatial Proximity**, Takashi Matsuyama, Le Viet Hao, and Makoto Nagao, *Computer Vision, Graphics, and Image Processing* 26, 303-318 (1984)
- **Control Strategies in Pattern Analysis**, Makoto Nagao, *Pattern Recognition* 17 1, pp. 45-56 (1984)

PUBLICATIONS

Technical Reports

Internal migration flows for a diversity of nations are analyzed in two publications from the University of California, Santa Barbara:

Migration Regions of the United States (1983, 170 pp., \$25.00), in which numerical taxonomic procedures are applied to recently compiled Census data on migration streams between the 3,141 counties of the U.S., and **Tree Representations of Internal Migration Flows** (1984, 231 pp., \$25.00), which uses a cluster-analytic methodology for defining functional regions of a nation based on migration between its geographic subdivisions.

Paul B. Slater, author of these studies (supported by NIH), received his Ph.D. in regional science from the University of Pennsylvania.

Payment can be made to the Regents of the University of California, and sent to the Community and Organization Research Institute, Univ. of California, Santa Barbara, CA 93106, Attn.: Paul B. Slater

EURASIP DIRECTORY 1983

A directory of European signal processing research institutions

This publication is the result of an inventory made by EURASIP in the Fall of 1983, and contains concise descriptions of the research activities of 379 signal processing laboratories from 17 European countries. The first part contains questionnaire data and group descriptions, one page per laboratory and arranged in sections by country. The second part of the book consists of some 130 indexes on selected combinations of keywords: *signal theory, stochastic processes, detection/estimation, spectral analysis, filter theory; signal processing systems, technology, software; image processing, pattern recognition, data processing, communications, optical signal processing; biomedical, geo/astrophysical, acoustic/vibration; speech, sonar, radar, remote sensing and industrial applications.*

The EURASIP DIRECTORY is edited by an international board of leading experts in the field and is published by D. Reidel Publishing Company. Individual members of EURASIP ordering the book for personal use directly from Reidel are offered a 20% reduction from the list price.

EURASIP DIRECTORY 1983-D. Reidel Publishing Company
J.J. Gerbrands (editor) P.O. Box 17
ISBN 9027718245 3300 AA Dordrecht
Dfl. 155/U.S. \$59, UK £39.50 The Netherlands

New Journal Call for Papers

SPATIAL VISION

An International Journal of Psychophysical, Perceptual, and Cognitive Research on the Visual Processing of Spatial Information

Editorial centers

- *United Kingdom*, covering Europe, Africa, Asia, Japan, Australasia
- *Canada*, covering North and South America

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Aims and Scope

Spatial Vision is an interdisciplinary journal aimed specifically at the encouragement of communication between researchers on all aspects of human spatial vision, from mathematical modelling, through biophysics and the psychophysical analysis of visual processing, to the study of cognitive aspects of perception and computer vision. Submission of both theoretical and empirical papers is encouraged, as well as reviews of major topics in the field.

Theoretical contributions to **Spatial Vision** will be firmly based on experimental data, and mathematical arguments will be clearly presented and sufficiently illustrated to be useful to the experimentalist. In general, detailed mathematical arguments will be placed in appendices.

Experimental papers must be theoretically relevant and presented in a manner which emphasizes that relevance. It is planned to have issues on special topics from time to time, and invited articles of general interest by leading figures. Letters will be encouraged to air current problems and generate discussion on different theoretical points of view.

For further information:

VNU Science Press
P.O. Box 2073
3500 GB Utrecht
The Netherlands

CALENDAR OF EVENTS

4th Scandinavian Conference on Image Analysis

Trondheim, Norway, June 18-20, 1985

Topics of Interest

The conference is open to all aspects of Image Analysis, including:

- theoretical problems in image analysis
- remote sensing
- software
- hardware
- industrial applications
- biotechnical and biomedical applications

Submission of Papers

3 copies of a 300 word abstract, in English, should be submitted by **November 15, 1984** to:

Dr. Eric Swane
Automatic Control Division, SINTEF
The Norwegian Institute of Technology
N-7034 Trondheim-NTH
Telephone: 47 7 59 43 61

Deadlines:

Nov. 15, 1984 Reception of abstracts
Jan. 15, 1985 Notification concerning acceptance
March 15, 1985 Reception of camera-ready accepted papers

Pattern Recognition in Practice II

Amsterdam, June 19-21, 1985

Conference Secretariat

Dept. of Medical Informatics, Free University, Van
de Boechorstraat 7, 108 BT Amsterdam, Tel.
(0)20-54 83 306

Program Committee

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Conference Chairmen

E.S. Gelsema, Amsterdam
L.N. Kanal, College Park

Proposed Topics

1. Computational aspects and estimation problems using large data sets.
2. Relationship between data bases, pattern analysis and expert systems.
3. Use of models in Pattern Recognition.
4. Use of interactive systems for pattern analysis.
5. Non-linear filtering techniques.
6. Precision of measurements in images.

Proceedings

...will be published by North-Holland Publishing Company

Deadlines

Nov. 1, 1984 Confirmation of attendance and submission of abstract
March 1, 1985 Submission of full paper (four copies to the Conference Secretariat)
Jan. 1, 1985 Notification of acceptance

CAR '85 Computer Assisted Radiology

Berlin, June 26-29, 1985

Sponsored by **IEEE Computer Society**,
Technical Committee on Computational Medicine

Symposium Committee

Judith M.S. Prewitt, AT&T Bell Laboratories, USA
C.C. Jaffe, Yale University, USA
Michael L. Rhodes, Multi-Planar Diagnostic Imaging Inc., USA
Roland Felix, Free University Berlin, FRG
Heinz U. Lemke, Technical University Berlin, FRG

The symposium is intended to serve as a forum for discussion between experts from radiology, radiotherapy, as well as nuclear medicine and professionals from the computer and physical science to evaluate the state of the art (to be presented in tutorials) and research results in the area of CAR. In this context, papers may address problems relating to, e.g.:

Clinical Aspects

- Digital imaging modalities (tomographic imaging, digital radiography and angiography)
- Computer assisted clinical imaging of function and localisation
- Image quality (Signal-to-Noise Ratio, Receiver-Operator Characteristics)
- Spatial/Temporal/Contrast Resolution
- Grey Scale and Colour Display
- 2-D/3-D Viewing and Morphometrics
- Surgical and Radiotherapeutic Planning
- Computer-Assisted Diagnostic Decision Support
- Composite Imaging
- Patient medical record management
- Teleradiology and Conferencing

Technical Aspects

- 2-D, 3-D and 4-D Data Processing and Display
- Modelling and Shaping for morphological and functional objects
- Knowledge Representation and Processing
- Methodologies and Algorithms
- Data Transmission and Remote Processing in Networks
- Parallelism and Very Large Scale Integration
- Imaging Hardware
- Interfaces and Standards

These aspects are mainly related to the so-called "Specialised Radiological Services" as defined by the World Health Organisation (WHO). A special session in the symposium will be dedicated to concepts of digital radiology for "Basic Radiological Services" (WHO) which shall also be of particular interest to developing countries.

Dates of Submission

(Submissions should be made in German or English to the address of AMK Berlin below.)

November 15, 1984

Four copies of 200-500 word abstract

January 15, 1985

Acceptance and author's kits mailed

March 15, 1985

Complete camera ready made manuscripts due

AMK BERLIN

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and Congresses
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CALL FOR PAPERS

Image Science-85

June 11-14, 1985
Helsinki University of Technology
Otaniemi, Finland

Sponsored by International Commission for Optics
Helsinki University of Technology (TKK)
Technical Research Centre of Finland (VTT)
Ministry of Education

Local Organizing Committee

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Dr. J. Stammes (Oslo)
Prof. J. Tsujiuchi (Tokyo)

Program Topics

Contributed papers from all areas related to image science and technology can be submitted for presentation at the meeting:

Fundamentals

- *Image formation*: optics and optical components of imaging systems, imaging methods such as silver based imaging, non-conventional imaging and electronic imaging, chemistry and physics of image formation, holography, colour
- *Image processing*: optical, digital, video, spatial light modulators
- *Image quality*: subjective image quality, image quality models and metrics, evaluation of image quality)

Applications (not an exhaustive list)

- *Satellite imaging*
- *Imaging in robotics*
- *Acoustical imaging*
- *Display technology*
- *Graphic arts*
- *Imagery in medicine*
- *Tomography*
- *Vision*
- *Holographic applications*
- *Robot vision*

Abstracts

Authors are invited to submit abstracts of original research papers for presentation in the technical sessions by **31 January 1985**.

IJCAI-85

University of California, Los Angeles
18-24 August 1985

The goal of IJCAI-85 is to promote scientific interchange, within and between all subfields of AI, among researchers from all over the world. The conference is sponsored by the International Joint Conferences on Artificial Intelligence (IJCAI), Inc., and co-sponsored by the American Association for Artificial Intelligence (AAAI).

Topics of Interest

- *AI architectures and languages*
- *AI and education* (including intelligent CAI)
- *Automated reasoning* (including theorem proving, automatic programming, planning, search, problem solving, commonsense, and qualitative reasoning)
- *Cognitive modelling*
- *Expert systems*
- *Knowledge representation*
- *Learning and knowledge acquisition*
- *Logic programming*
- *Natural language* (including speech)
- *Perception* (including visual, auditory, tactile)
- *Philosophical foundations*
- *Robotics*
- *Social, economic and legal implications*

Submission Details

Authors are invited to submit papers on previously unreported research. Four complete hard copies (no electronic submissions) should be submitted.

Timetable

7 January 1985

Papers due

16 March 1985 Notification of acceptance

16 April 1985 Camera ready copy due

Contact Points

Submissions should be sent to the Program Chair:

Aravind Joshi
Department of Computer and Information Science
University of Pennsylvania
Philadelphia, PA 19104, USA

General inquiries should be directed to the General Chair:

Alan Mackworth
Department of Computer Science
University of British Columbia
Vancouver, BC, Canada V6T 1W5

Inquiries about **program demonstrations** and other local arrangements should be sent to the Local Arrangements Chair:

Steve Crocker
The Aerospace Corporation
P.O. Box 92957
Los Angeles, CA 90009, USA

Inquiries about **tutorials, exhibits, and registration** should be sent to the AAAI Office:

Claude Mazzei
American Association for Artificial Intelligence
445 Burgess Drive
Menlo Park, CA 94025, USA

afcet Automatique, Congress '85
The Tools for Tomorrow

Toulouse (France), 23-26 October 1985

The AFCET-AUTOMATIQUE, one of the societies of the French Computer Association (Association Francaise pour la Cybernetique Economique et Technique) is organizing its biennial conference in **Industrial electronics, control and instrumentation**, with emphasis on the **application of advanced theory and models to new fields**.

The topics within the scope of the conference are:

1. Methods

- optimization, modelization, identification
- control structures
- control architecture and operational security
- expert systems and artificial intelligence
- industrial local area network
- instrumentation, sensors
- human factor engineering
- education and training

2. Applications

- energetic systems, continuous process
- computer integrated manufacturing (productics)
- aeronautics and space
- biotechnology, medical and biological engineering
- communication network

Papers written in French or English will be accepted. Four copies of the summary of the proposed paper, not exceeding two pages, of work not published previously should be addressed to the AFCET headquarters before **December 1, 1984**. Additional information can be obtained from:

AFCET - Elisabeth Fayola or Catherine Frachon
 156 boulevard Pereire - F, 75017 Paris
 Tel.: (1)766 24 19, telex: EURTEL 290 163 Code 235

5th International Conference on
Robot Vision and Sensory Controls

29-31 October 1985
 Amsterdam, The Netherlands

Organized by: IFS (Conferences) Ltd., Kempston, Bedford, UK
 Sponsored by: The Royal Institution of Engineers in the Netherlands (KIVI)
 The Dutch Society of Informatics (NGI)
 The Society for Production Engineering

The aim of the **RoViSeC5** Conference is to explore the capabilities of robot vision and sensory systems for use in the efficient, productive and profitable factories of the future.

Suggested Topics

- Component recognition
- Vision data processing
- Tactile sensing
- Weld seam tracking
- Active compliance
- Image analysis
- Intelligent systems
- Software
- Force sensing
- Sensor design
- Vision in assembly
- Process control
- Visual servoing

- Multi-sensor systems
- Vision hardware
- Economic justification

Submission Details

The official conference language is **English**. A 100 word **abstract** should be submitted to the address below by **1 March 1985**. Completed manuscripts in camera-ready form, must be submitted by **30 June 1985** for final review. Send abstracts to: *The Conference Executive (RoViSeC 5)*
 IFS (Conferences) Ltd, 35-39 High Street
 Kempston, Bedford MK42 7BT, England
 Tel: (0234) 853605, Telex: 825489

PARTING THOUGHTS

Reactions to Orwell's '1984'

In closing this issue—my last as editor—I would like to share with you some correspondence received as a result of my wondering, in the editorial remarks in Volume 7, Number 1 (January 1984) of the IAPR Newsletter, how closely this year would resemble Orwell's 1984.

John Getsinger, Esq., Harvard Law School, writes in his letter:

...As to the responsibility for the social consequences of automation, my own belief is that such worrying is a tempest in a teapot.... The consequences we all fear from time to time become somewhat more comprehensible when we stop and recall that each consequence flows ultimately from some human action which, in principle, should be possible to control using the mechanisms and insights gained over the past 2,500 years of conscious lawmaking...

Of course, if it should become technically feasible to produce a mechanism whose ability to sift and weigh both sensory data and intermediate symbols begins to approach that of a human (or even that of a domestic animal), all bets are off. Asimov's Laws of Robotics would begin to look a lot less silly if such a mechanism happened to control the firepower of a modern aircraft carrier, for instance, as would the primitive but powerful chills up and down the human spine that the yokels outside Dr. Frankenstein's laboratory were hypothesized by Mary Shelley to feel. Even further along in the realm of legal science fiction, you might consider the possible consequences of embodying the articles of organization, by-laws, and valid acts of directors and officers of a corporation into such a mechanism. It would, by virtue of corporate law as it now stands, be the property of its stockholders, but its legal rights and duties would presumably be that of any legal person. (The same might be true of the aircraft carrier under maritime law, wherein a ship is treated as a legal person which can sue and be sued; naturally, the rules for naval vessels would probably differ from those for civil craft.) The legal system would begin to crack under the strain if the physical appearance of such mechanisms approached that of human beings, perhaps; on the other hand, slavery and serfdom in a variety of forms managed to be fitted into several different types of legal systems in the past.

My belief is that if we all worry about these things just a little, none of us will have to worry about them very much, except in particular cases. And finally, in answer to your fear of the emptiness of early retirement, consider the opposite possibility, that we will all have far more work to do....

