IAPR

International Association for Pattern Recognition, Inc.
An affiliate member of the International Federation for Information Processing

NEWSLETTER

IN MEMORIAM

King-Sun Fu   1930 - 1985

It is with great sorrow that we report the sudden death of King-Sun Fu on 29 April 1985. Professor Fu, more than any other individual, was the founder and guiding spirit of the International Association for Pattern Recognition, initially as chairman of the Standing Committee for IJCPR (the predecessor of IAPR) and then as its first elected president. His contributions to the field of pattern recognition are too extensive to be listed here. But far beyond his many and far-reaching technical contributions, Professor Fu also exerted an enormous influence on the professional development of the field of pattern recognition. He was the first chairman of the IEEE Computer Society's technical committee on Machine Intelligence and Pattern Analysis, and it was largely through his leadership that the Transactions on Pattern Analysis and Machine Intelligence was launched. Subsequently, under his direction as the publication's first editor-in-chief, the journal developed into a technical publication of the highest standards. He was organizing or program chairman of enumerable technical conferences and workshops, and there was hardly a meeting relating to pattern recognition or image processing that did not at least have King-Sun on its program committee or at which he presented a paper.

King-Sun Fu was born in China on October 2, 1930. He received his B.S. degree from the National Taiwan University in 1953, and his MASc. degree from the University of Toronto in 1955. In 1959 the University of Illinois at Urbana awarded him his doctorate. From 1959 to 1960 he worked for the Boeing Company, and then in 1960 he joined the electrical engineering department at Purdue University, where he remained until his death. In recognition of his many achievements, Purdue named him Goss Distinguished Professor of Engineering. He was the recipient of a Guggenheim Fellowship, the 1981 Senior Research award of the American Society for Engineering Education, the 1982 IEEE Education medal, and the 1982 Harry Goode award of the American Federation of Information Processing Societies (AFIPS). He was a member of the National Academy of Engineering and Academia Sinica. His publications include more than 130 technical papers, 4 books, and 15 edited volumes. He is survived by his wife Viola and their children, Francis, Thomas and June.

He was a dear friend and source of constant inspiration to all of us. We shall miss him very much.

Herbert Freeman

Contents

FROM THE EDITORS DESK

Dear Colleagues,

This issue of the newsletter has suffered the startup delays associated with a new editor, an intransigent troff and a reluctant laser printer. Future issues should be back to the more regular schedule.

It is sad that the first item to report is the death of K-S Fu. In addition to his extensive contributions to the pattern recognition area he was one of the main founders of the IAPR.

This issue contains a letter from the new president and the regular features of reports from Japan, New Book Announcements and Calls for Papers. There have been so many changes to the IAPR directory since the last newsletter that it is being reproduced in full again in this issue. A new format is being used for the Calendar.

It is now possible to send material to me over the ARPA network in addition to more conventional methods. My network address is *reeves@tesla.ARPA.*

Anthony P. Reeves

Message from the New President
of the IAPR

T. Sakai

It is a great honour for me to have the opportunity to present this message to all members of the IAPR.

It is interesting to note that the interval between the 7th ICPR (1984) and the 4th ICPR (1978), (IAPR was officially established in 1/1/1978) is the same as that between the original IJCPR (International Joint Conference on Pattern Recognition) in Washington (1973) and the 4th ICPR. Because of the effects of the Canadian Group headed by Professor Levine, the Montreal Conference was a great success, including the tutorials just before the conference.

In the history of pattern recognition, 1984 may be said to be the beginning of the "jump" in a "hop, skip, jump" type of sport. (It happens that our 7th ICPR coincides with the 1984 Olympic games in Los Angeles).

The "hop" was the period until the end of the 1960's, during which the studies of pattern recognition were in a controlled or cooperative environment.

The "skip" began in 1970 with the concepts of speech understanding, image understanding and machine vision.

Pattern understanding, which goes beyond pattern recognition is associated with a hierarchical model of rules or knowledge of the objects to be recognized. The origin of this idea may be seen in Robotics (hand-eye projects) and man-machine interfacing via speech.

Many papers were presented at the 7th ICPR corresponding with various hierarchical levels of pattern understanding.

The essential part of understanding lies in the method of formalizing the structural rules of the real world which consists of objects to be recognized and their environments. With this conviction, I hope that the so-called constraints may prove to be new general rules in the interactive cognitive world which superimposes itself over the absolute physical world.

In *the "jump"* of pattern recognition, this field would be recognized and cultured by many inter-disciplinary specialists such as mathematicians, psychologists, physiologists, linguists, computer scientists. Fundamental researchers and practitioners engaged in AI-research and various applications would feel the necessity of close cooperation.

The distances now existing between PR (pattern recognition) and AI (artificial intelligence), PR and ME (micro electronics) will rapidly decrease in a few years.

The real time pattern understanding associated with ME will provide computer fields with many actual methodologies such as parallel processing, even driven communication, and new algorithms for distributed systems. Just as in the previous trend in numerical analysis, PR will, on the other hand, be focused on fun-damental and low level processing for ME, and on the other, on the issue of integrated and high level processing for problem solving.

So much for the trends of pattern recognition. Although some people feel pattern recognition to be an engineering application, the most important things come from the fact that the function of pattern recognition is a most fundamental, essential sensory mechanism for animals. Actually, pattern recognition is a total system in Cybernetics. The more differences of personal research history, the more varieties of viewpoints, the better the communications and integration between IAPR members, to accelerate the progress of PR fields.

IAPR was originally established for the purpose of conferences only, but thanks to the work of past officers of IAPR and the cooperative efforts of the members, we are happy to have the newsletter since 1978, "Pattern Recognition Letters" as an official publication of IAPR since 1983, and technical committees since 1982.

Lastly, I strongly urge all members to do more stimulating, interactive, and rapid communication for matters of mutual interest through the above mentioned IAPR organizations.

CORRECTION

In The November 1984 Newsletter section on Amendments to the Constitution proposal 2, the amount for category B was incorrectly reported as $260 instead of $360. The corrected text for proposal 2 is as follows:

Proposal 2 concerns an increase in the annual dues to $50, $120, $360 and $1200 for categories A1, A2, B and C, respectively, and $15 for individual members.

BOOK ANNOUNCEMENTS

An Introduction to Text Processing
G. Sampath.

Available from River Valley Publishing, P.O. Box 99752, Jeffersontown, KY 40299

This book is an introduction to the study of the structure and processing of different types of text. It is based on a graduate-level course in Text Processing taught by the author at Syracuse University and the University of Louisville.

Text may be considered to have three basic properties: texture, form and content. Texture refers to underlying patterns out of which more complex patterns may be generated. These complex patterns are independent of form and content, and may be viewed as segmented objects. Form may be display form or syntactic form. The result of extracting display form from a segmented pattern is a paged object. Syntactic form is extracted from segments to create an object that is grammatically acceptable. The content of a segmented pattern may be studied in different ways: statistically, contextually, semantically, or through usage. This book discusses text processing in the above terms, considering both natural language text and source programs in a high-level language. The emphasis is on the former.

The Dictionary of Image Processing and Pattern Recognition
English to Finish

This dictionary has been published by the Pattern Recognition Society of Finland in February, 1985. It contains over 500 entries

(in English) with short explanation (in Finnish). Editors: I Hartimo, U. Laine, T. Niemela, G. Nyman, E. Oja, P. Tuovinen. A small quantity of this dictionary is available to Technical Committees and national organizations which plan similar work; the entries (in English) may be useful in establishing similar vocabularies in other languages. Please contact Mr. Kai Makisara, Secretary of the Pattern Recognition Society of Finland, Helsinki University of Technology, Department of Technical Physics, Otakaari 3, SF-02150 ESPOO, Finland. A nominal handling and shipping cost of $10. will be charged.

Advances in Information Sciences and Technology Vol. 1: Pattern Recognition and Digital Techniques

Editor: D. Dutta Majumder

The volume contains all the invited papers and a selection of the contributed papers from scientists in India and other countries of the world presented at the Golden Jubilee Conference of the Indian Statistical Institute on Advances and Information Sciences and Technology in the fields of Pattern Recognition and Digital techniques. It is concerned with the following themes, (1) Pattern Recognition Methods, (2) Pattern Recognition Systems, (3) Pattern Recognition Applications, (4) Image Analysis Methods, (5) Image Analysis Systems, (6) Image Analysis Applications, (7) Speech Recognition and Processing, (8) Bio-medical Applications and (9) Data Communication Methods and Applications.

Some of the important contributions are: Recent Advances in Syntactic Pattern Recognition by King Sun Fu (USA), The State of the Art In Image Analysis by Azriel Rosenfeld (USA), Problems of Nearest Neighbour Rule in Statistical Pattern Classification by Pierre A. Devijver (Belgium), Fuzzy Information Modelling by Madan M. Gupta (Canada), Quantitative Image Analyser System Design by T.W. Braggins (UK), Optimal Image Restoration Problems by Hidematsho Ogawa (Japan), Un-supervised Classifications Using Shape Information by Ernesto Bribiesca (Mexico), Syntactic Approach in EEG Analysis by V. Pollak (Canada), Hierarchical Classification Problems by Morton Naddler (France), State of the Art in Data Communications by J. Das (India), and Computer Communication and Distributed Data Base by D. Dutta Majumder (India).

The price of the volume is Rs.280.00 in India, Bangladesh, Nepal, Pakistan and Srilanka and $75.00 for all other countries in the world. Purchase orders should be addressed to the Manager, Statistical Publishing Society, 203 B.T. Road, Calcutta 700 035, India. For any other information, contact D. D. Majumder, Indian Statistical Institute, Calcutta 700 035, India.

REPORTS FROM JAPAN

This section contains report titles which have been submitted by corresponding editor Professor M. Nagao.

- A Formant Extraction Method by a Local Approximation of Speech Spectrum, *Kensaku Fujii, Kiyoshi Miyazaki, Kouya Hasui*, Fujitsu Laboratories, Ltd.,

- Recognition of on-line KATAKANA Characters Using a Syntactic Method, *Yasuo Fukamachi*, Univ. of Electro-Comm., *Takeshi Agui, Masayuki Nakajima*, Tokyo Inst. of Tech. *Taekyun Kim*, Chungnam Univ.(Korea).

- On-Line Recognition of Korean Characters (II), *Taekyun Kim*, Chungnam University, Daejon, Korea, *Takeshi Agui, Masayuki Nakajima*, Tokyo Institute of Technology, Yokohama, Japan.

- On-Line Recognition of Thai Characters, *Pipat Hiranvanichakorn, Takeshi Agui, Masayuki Nakajima* Tokyo Institute of Technology, Imaging Science and Engineering Laboratory.

- Classification of Handprinted Kanji Character by the Three-Corner Codes, *Lingquan Wang, Hidehiko Sanada, Yoshikazu Tezuka*, Faculty of Engineering, Osaka University.

- A Sampling Theorem in the Signal Space Spanned by Periodic Spline Functions of Degree 2, *Kazuo Toraichi, Masaru Kamada*, Institute of Information Sciences and Electronics, Univ. of Tsukuba, *Ryoichi Mori*, Doctoral Program in Engineering, Univ. of Tsukuba.

- The Measurement of the 3-D Coordinates and Attitude of the Polyhedra, *Heng-li Guo, Masahiko Yachida, Saburo Tsuji*, Department of Control Engineering, Osaka University.

- A Parallel Lattice Structure for Adaptive Signal Processing, *Itsuo Kumazawa, Taizo Iijima*, Tokyo Institute of Technology.

- On Examination of the Local Non-Stationary Processing, *Tohru Kiryu*, Dept. of Inf., Faculty of Engr., Niigata Univ., *Taizo Iijima*, Dept. of Computer Science, Tokyo Institute of Technology.

- A Cubic Spline with a Curve Deviation Nearly Proportional to its Chord Length, *Munekazu Sakamoto, Mikio Takagi*, Dept. of Electrical Engineering and Electronics, Institute of Industrial Science, University of Tokyo.

- Forming REISHO of Chinese Character with a Computer, *Xianrong Zhang, Hidehiko Sanada, Yoshikazu Tezuka*, Faculty of Engineering, Osaka University.

- A Semi-automatic System for Determining Feature Parameters for Generating Square-styled Brush-written Chinese Characters, *Fumitaka Uchio*, Nagoya University of Commerce, *Xianrong Zhang, Hidehiko Sanada, Yoshikazu Tezuka*, Faculty of Engineering, Osaka University.

- Computer Analysis of Length of Digital Lines, *Takayasu Ito, Minoru Ashibe*, Dept. of Information Engineering, Faculty of Engineering, Tohoku University.

- Stereo Matching Method Based on Edge Segments, *Yasuo Seki*, Musashino Electrical Communication Laboratory, N.T.T.

- A Mathematical Theory of Recognizing Patterns (Part III. Recognition-Abstraction and Fixed-Point Theorems), *Shoichi Suzuki*, Dept. of Management Information, School of Information, Bunkyo University.

- Architecture of INTERACTIVE PICTURE EVALUATION SOFTWARE PACKAGE, *Shuuichi Miura, Tadashi Fukushima, Yoshiki Kobayashi, Masao Takatoo*, Hitachi Research Laboratory, Hitachi Ltd., *Toshio Usui*, Omika Works, Hitachi Ltd.

- Determining Object Depth with Region Matching on a Pair Needle Maps by the Photometric Stereo Systems for the Bin-picking Task, *Katsushi Ikeuchi*, Electro-Technical Laboratory.

- Detection of Global Abnormality Candidates from X-ray Stomach Images, *Yasuyo Terashi, Yoshiaki Shirai*, Electro-Technical Laboratory.

- Survey: Extraction of Surface Structures from Visual Information, *Kokichi Sugihara*, Faculty of Engineering, Nagoya University.

- On the Nested Heap Structure in Smoothsort, *Kohei Noshita, Yoshinobu Nakatani*, Dept. of Computer Science, Denkitusin University, Chofu, Tokyo 182.

- Some Considerations on the Parallel Bubble Sort and Its Speedup, *Yoshihide Igarashi, Kazuhiro Sado and Noriaki Adachi*, Dept. of Computer Science, Faculty of Engineering, Gunma University.

- Another Probabilistic Approach to Hard Combinatorial Problems, *Kazuo Iwama*, Kyoto Sangyo University.

- Tuple Logic - A Proposal of a Kind of Predicate(?) Logic Without Predicates, *Kenichi Morita*, Faculty of Engineer-

ing Science, Osaka University.

- **Intelligent CAI System Based on Industive Inference in the Case of Chemical Reaction Teaching,** *Hisayki Kinoh, Riichiro Mizoguchi, Kazuhisa Kawai, Masasi Ganke, Junichi Toyoda, Osamu Kakusho,* Institute of Scientific and Industrial Research, Osaka University.

- **A Study of LISP Oriented Image Processing System,** *Hiroshi Nagahashi, Mikio Nakatsuyama, Norio Nishizuka,* Faculty of Engineering, Yamagata University.

- **An Analytical Investigation on the Utilization of Knowledges of Experts by Using the Software System for Welding Inections,** *Hiroyasu Koshimizu,* Nagoya Municipal Industrial Research Inst.

- **Integration of Top-Down and Bottom-Up Analyses in Image Understanding,** *Takashi Matsuyama,* Department of Electrical Engineering, Kyoto University, *V. Hwang,* Center for Automation Research, University of Maryland.

- **Rule Oriented Knowledge Representation in Prolog,** *Tanaka Hozumi,* Tokyo Institute of Technology.

- **Knowledge Structuring and Management Based on Logic Programming,** *Furukawa Koichi, Taeuchi Akikazu, Kunifuji Susumu,* ICOT.

- **Planning a Collision-Free Path for a Deformable Object,** *Hiroshi Inagaki, Kokichi Sugihara, Noboru Sugie,* Faculty of Engineering, Nagoya University.

- **A Measure for Clustering of Speakers Based on Technique of Principal Components Analysis,** *Rong Yu, Masayuki Kimura,* Faculty of Engineering, Tohoku University.

- **On the Geometrization of the Discriminal Process Model,** *Ryuzo Takiyama,* Kyushu Institute of Design.

- **A One Dimensional Context-Dependent Similarity Measure,** *Eiichi Tanaka,* Department of Information Science, Utsunomiya University.

- **A Two Dimensional Context-Dependent Similarity Measure,** *Eiichi Tanaka,* Department of Information Science, Utsumomiya University.

- **Character Segmentation and Recognition on a Graphical Chart,** *Osamu Iwaki, Hiroki Arakawa,* Yokosuka Electrical Communication Laboratory, NTT.

- **Understanding Machine Drawings Using a Planning Network and a Geometric Modeller,** *Masatoshi Ito, Atsushi Mori,* Tokyo Institute of Technology.

- **Generating Specific Models Based on Generic Models from a Single View - An Indoor Scene Modelling,** *Takeshi Shakunaga, Hiroshi Kaneko,* Musashino Electrical Communication Laboratory, NTT.

- **A Robot Planning Algorithm Utilizing Petri Net,** *Hitoshi Katta, Kouji Itou, Toshio Tsuji, Mitsuo Nagamachi,* Faculty of Engineering, Hiroshima University.

- **Talker Characteristic Model by Means of Center Gravity of Five Vowels,** *Koichi Nishioka, Masayuki Kimura,* Faculty of Engineering, Tohoku University.

- **Recognition of Coarticulated Vowels by Menas of the Transition of Spectra,** *Hiroshi Shimodaira, Masayuki Kimura,* Faculty of Engineering, Tohoku University.

- **Production System for Documents Recognition,** ul Hidekazu Enjo, Osamu Iwaki, Hiromi Kida, Yokosuka Electrical Communication Laboratory, NTT.

- **Corresponding Points Extraction for On-Line Cursive Character Classification,** *Yohimasa Kimura, Kazumi Odaka,* Yokosuka Electrical Communication Laboratory, NTT.

- **Recognizer with Learning Mechanism for Handwritten Script English Words,** *Yuji Yamaya, Kyota Aoki,* Faculty of Engineering, Utsunomiya University.

- **Structural Analysis of Chinese Characters by Variable Slit Method,** *Makoto Nagao, Kunihiro Ohnishi,* Faculty of Engineering, Kyoto University.

- **An Extraction Method of Subpattern from Handwritten KANJI Characters,** *Hiromi Aota, Naoki Tanaka, Hidehiko Sanada, Yoshikazu Tezuka,* Osaka University, *Mituru Siono,* Okayama University of Science.

- **Individual Recognition in Similar Categories Using the Multi-Step Discriminant Method,** *Shogo Ayame, Yoshihiro Kitamura, Hidehiko Sanada, Yoshikazu Tezuka,* Faculty of Engineering, Osaka University.

- **An Approach to the Design of Computer-Assisted Organic Synthesis,** *Takkayuki Torikai, Kazunori Koh, Kazuo Miura, Taiho Kanaoka, Kimitoshi Fukunaga, Shingo Tomita,* Faculty of Engineering, Yamaguchi University.

- **Edge Detection for Stereo Matching Based on Ridge Points on the Gradient Image,** *Yasuo Seki,* Musashino Electrical Communication Laboratory, NNT. *Tetsuya Sekiguchi,* Kogakuin University.

- **Development of 3-Dimensional Reconstruction and Display System of Neurons from Microscopic Images,** *Hiroki Horiuchi, Shigeki Yokio, Jun-ichiro Toriwaki, Teruo Fukumura,* Faculty of Engineering, Nagoya University.

- **Utilization of a Stripe Pattern for Dynamic Scene Analysis,** *Minoru Asada, Hidetoshi Ichikawa, Masahiko Yachida and Saburo Tsuji,* Department of Control Engineering, Osaka University.

- **Image Understanding Based on Logic Programming— Timing Chart Understanding,** *Sumio Yamada, Kazuhisa Kawai, Jun'ichi Toyoda,* Institute of Scientific and Industrial Research, Osaka University.

- **Precise Matching of Motion Stereo Images Guided by Coarse Disparity Map,** *Gang Xu, Saburo Tsuji and Minoru Asada,* Department of Control Engineering, Osaka University.

- **A Parallel Algorithm for the Recognition of Polyhedrals,** *Dana H. Ballard, Matthew Curtiss,* University of Rochester.

- **A Fast Method for Extraction of 3-D Information Using Multiple Stripes and Two Cameras,** *Tomio Echigo,* IBM Japan, Ltd., Yasu Plant, *Masahiko Yachida,* Department of Control Engineering, Osaka University.

- **A New Image Extraction Method for Moving Objects,** *Atsushi Kawabata, Shinya Tanifuji, Yasuo Morooka,* Hitachi Research Laboratory, Hitachi Ltd.

- **Image Retrieval with Associative Memory,** *Masayukji Tani, Shinya Tanifuji,* Hitachi Research Laboratory, Hitachi Ltd.

- **Theoretical Conditions for Measurement and Generation of Colored Images,** *Shoji Tominaga,* Osaka Electro-Communication Univ.

- **Survey: Line-Drawing Recognition Techniques for Engineering and Office Automation,** *Akio Okazaki, Shou Isunekawa,* Research and Development Center, Toshiba Corporation.

- **Scaling Theorems for Zero Crossings,** *A.L. Yuille and T. Poggio,* Artificial Intelligence Laboratory, Massachusetts Institute of Technology.

- **Talker Recognition by the Model of Talker Characteristic,** *Kiochi Nishioka, Masayuki Kimura,* Faculty of Engineering, Tohoku University.

- **A Topdown Control Strategy In a Speech Understanding System,** *Yutaka Kobayashi, Yasuhisa Niimi,* Kyoto Institute of Technology.

- **Study of a Simple Recognition Algorithm for Printed Japanese Documents,** *Hiroshi Kamezawa, Yoshiaki Tadokoro,* Toyohashi University of Technology.

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CALLS FOR PAPERS

Statistics and Pattern Recognition

Edinburgh, Scotland, July 15-16, 1985

Program:
An open meeting on "Statistics and Pattern Recognition" will
follow the international workshop held in Edinburgh, and is
sponsored by the Royal Statistical Society, and the Interna-
tional Association for Pattern Recognition. The meeting will

include introductory survey lectures by some of the workshop participants, and there will also be opportunities for short contributed papers by forum participants.

Topics of Interest:
The meeting will cover the whole area of interaction between statistics and pattern recognition, including
- Statistical pattern recognition
- Discrimination and classification
- Image analysis and remote sensing

Deadlines:
May 24, 1985   Short abstract due (15 lines)

More Information:
> Mr. P. R. Fisk
> Department of Statistics
> University of Edinburgh
> James Clerk Maxwell Building
> King's Buildings
> Mayfield Road
> Edinburgh, EH9 3JZ

Fourth ASSP Workshop on Multidimensional Signal Processing

Xerox International Center, Leesburg, Virginia October 28-30, 1985

Program:
The Workshop is sponsored by IEEE Acoustics, Speech, and Signal Processing Society.

The objective of the Workshop is to provide a forum for the discussion of new theoretical developments in multidimensional signal processing and applications to real-world problems. The intent is to attract researchers from many diverse fields who, while working on related research topics, do not ordinarily meet and confer regarding their research.

The Workshop will consist of plenary sessions of a tutorial character, poster sessions where each participant will make a presentation, and parallel discussion sessions.

Topics of Interest:

Multidimensional Signal Processing Algorithms
- Spectral Estimation
- Signal Recovery from Partial or Incomplete Information
- Signal Modeling and System Identification
- Fast Algorithms for Signal Processing

Geophysical Applications
- Satellite Data Processing and Imaging
- Seismic Data Processing
- Wave Equation Migration
- Seismic Inverse Problems

Image Processing Applications
- Image Models
- Image Reconstruction from Incomplete Observations
- Computerized Imaging and Tomography
- Computer and VLSI Architectures for Image Processing

Submission of Papers:
Attendance at the Workshop will be by both invitation and application. For information concerning participation, please contact the Registration Chairman prior to June 1, 1985:

> Barbara B. Hope
> Center for Automation Research
> University of Maryland
> College Park, MD 20742
> (301) 454-4526

Computer Architecture for Pattern Analysis and Image Database Managment

Miami Beach, Florida November 18-20, 1985

Program:
A program of papers, panels, and discussions is planned for this 3 day workshop. The atmosphere will be less formal than that of a conference, with the emphasis on exchanges of the latest results, approaches, and ideas.

Topics of Interest:
- Image Processing Architecture
- Architecture for Inference Engines
- Image Database Machines and Systems
- Parallel Algorithms for Vision and Pattern Recognition
- VLSI and Systolic Implementations
- Theory and Applications

Submission of papers:
A 500-1000 word abstract is due by June 15,1985. Authors will be notified of acceptance by approximatly July 1,1985, and the author kits will be provided by July 15,1985. Send paper abstacts to either:

Steven L. Tanimoto	Professor Leonard Uhr
Co-Program Chairman	Co-Program Chairman
Dept. of Computer Science	Dept. of Computer Science
FR-35	Univ. of Wisconsin, Madison
University of Washington	1210 W. Dayton St.
Seattle, WA 98195	Madison, WI 53706

Deadlines:
June 15, 1985   Abstract due.
September 15, 1985 Camera-ready manuscripts due.

International Conference on Advances in Pattern Recognition and Digital Techniques

Calcutta, India, January 6-9, 1986

Program:
The conference will be held at the Indian Statistical Institute, and will be of interest to anyone involved in the field of pattern recognition, image analysis, artificial intelligence, and allied digital techniques. The program will consist of invited long papers and contributed short papers. Cosponsored by the Indian Unit for Pattern Recognition and Artificial Intelligence (IUPRAI), an Indian affiliate of IAPR.

Topics of Interest:
Special session topics will include:
- Statistical and syntactic pattern analysis
- Pattern directed inference and inductive learning
- Signal and image processing
- Image recognition and understanding
- Speech recognition and understanding
- Human perception modelling
- Remote sensing and natural resource study
- Knowledge based systems
- Specialized computer architecture
- Data clustering and classification
- Data communication methods
- Computer vision systems
- Office automation and two tone image processing
- Fuzzy set theoretic approaches
- Bio-medical applications
- Industrial applications
- Natural language processing
- Fifth generation computer architecture

More Information:

Prof. D. Dutta Majumder
Electronics & Communications Sciences Unit
Indian Statistical Institute
203, B. T. Road
Calcutta 35, India
Telephone: 52-6694
Telex: 21-2210 STAT IN

International Conference on Acoustics, Speech and Signal Processing

Tokyo, Japan April 8-11, 1986

Program:

The 1986 International Conference on Acoustics, Speech and Signal Processing is the eleventh in a series of international conferences devoted to the experimental and theoretical aspects of signal processing, speech and acoustics, and will be the first one to be held in the Far East. Under the cosponsorship of the IEEE Acoustics, Speech and Signal Processing Society, the Acoustical Society of Japan, and the Institute of Electronics and Communication Engineers of Japan, the conference will be held on April 8, 9, 10 and 11 in Tokyo, Japan at the Keio Plaza Hotel. The official language of the conference is English.

Topics of Interest:

- General Signal Processing
- Spectrum Estimation and Signal Modeling
- Speech Processing
- Multi-Dimensional Signal Processing
- Underwater Acoustics, Geophysics and Other Applications
- VLSI for Signal Processing
- Electroacoustics and Psychoacoustics

In view of the ever-increasing needs for signal processing techniques in various areas of application, however, papers dealing with topics beyond these conventional categories will also be included, such as

- Signal Processing for the Handicapped
- Signal Processing for Image Communications
- Signal Processing and Speech Perception
- Signal Processing for Non-Destructive Inspection and Medical Applications
- Signal Processing and Information Processing

Submission of Papers:

Submit the title, a 400-word summary, and a form-description. An example form description is to be printed in the June 1985 issue of the IEEE Trans. on ASSP. Participation in the program is conditional on receipt of the four-page photo-ready paper by December 31, 1985.

Summaries should be submitted to:

Secretariat
ICASSP 86 - Tokyo
c/o Simul International, Inc.
Kowa Bldg., No. 9
1-8-10, Akasaka
Minato-ku, Tokyo 107 JAPAN

Deadlines:

August 31, 1985

Submission of three copies of a 400-word summary along with authors names, addresses, affiliations, telephone and telex numbers, and a form description.

December 31, 1985

Submission of the four-page photo-ready paper.

More Information:

Professor Hiroya Fujisaki
General Chairman of ICASSP 86
Department of Electrical Engineering
Faculty of Engineering
University of Tokyo
Bunkyo-ku, Tokyo, 113 JAPAN

EUSIPCO - 86
European Association for Signal Processing
Third European Signal Processing Conference

September 2-5, 1986

Program:

The European Signal Processing Conference EUSIPCO is a triennial international conference promoted and organized by EURASIP, the European Association for Signal Processing. Like its predecessors in 1980 (Lausanne) and 1983 (Erlangen), the aim of EUSIPCO-86 is to cover all aspects of signal processing theory and practice, and to promote the exchange of ideas between scientists and engineers working in this multi-disciplinary field. Sessions will include new research results, presentations of applications, and technological novelties. In addition, tutorial and review papers will be presented. All papers will be published in the Conference Proceedings. The conference is open to all aspects of signal processing.

Topics of Interest:

1-D Signal Processing
- Theory of signals and systems
- Digital filtering

2-D Signal Processing
- 2-D digital filtering
- Image processing
- Digital video

Speech and Sound
- Modeling
- Coding
- Analysis
- Recognition
- Digital audio

Detection and Estimation
- Detection
- Estimation
- Measuring
- Spectral analysis

Applications
- Industrial
- Biomedical
- Radar
- Sonar
- Geo/astrophysical

Software and Hardware
- Special purpose software
- Architectures
- VLSI
- Algorithms

More Information

EUSIPCO-86 Conf. Secr.
DELFT UNIVERSITY OF TECHNOLOGY
Dept. Applied Physics Room 236
P.O. Box 5046
NL - 2600 GA DELFT
The Netherlands

Eighth International Conference on Pattern Recognition

October 28-31, 1986

Program:

Conference will be of interest to anyone involved in the field of pattern recognition. The program will consist of long and short presentations and poster sessions. The official language of the Conference is English.

Topics of Interest:
- Data Classification, Clustering Algorithms;
- Signal and Image Processing;
- Pattern Analysis, Feature Recognition;
- Pattern Directed Inference, Inductive Learning;
- Modeling of Human Perception;
- Image Understanding and Recognition;
- Speech Understanding and Recognition;
- Computer vision, expert-systems in P.R.;
- Specialized Architectures VLSI for P.R.;
- Industrial Applications;
- Robotics;
- Biomedical P.R.;
- Remote Sensing;
- Office Automation P.R.;
- Text Understanding and Verification;

Submission of Papers:

Papers are invited on the above subjects of interest, as well as abstracts for poster sessions. Prospective authors should submit four copies of a draft of a full length paper or a 250-word abstract for poster sessions. Submissions should be made in English.

Deadlines:
December 2, 1985

More Information:

AFCET ICPR Secretariat
156, Boulevard Pereire
F.75017 PARIS
Telephone: (1) 766 24 19
Telex: 290 163 EURTEL Code 235

CALENDAR OF EVENTS

Date	*Event*	*Location*	*Sponsor/Information*
May 13-15, 1985	Fifth International Workshop - Expert Systems & Their Applications Conference and Exhibition	Palais des Congres Avignon, France	Jean-Claude Rault, Agence de l'Informatique, Tour Fiat - Cedex 16, 92084 Paris-La Defense, France
May 28 - June 7, 1985	Fundamentals in Computer Understanding: Speech, Vision and Natural Language	Palais des Congres, 8/10, rue de la Chancellerie, 78000 Versailles, France Telephone: (3) 951.46.30	Service des Relations Exterieures, Bureau " Cours - Ecoles, Domaine de Voluceau - Rocquencourt, BP 105 - 78153 Le Chesnay Cedex (France) Telephone: (3) 954.90.20 postes 3515 - 3675 Telex: 697 033 F
June 17-20, 1985	4th Scandinavian Conference on Image Analysis	Norwegian Institute of Technology Trondheim, Norway	Secretariat 4SCIA, Att: Pat Ueland, Studies and Academic Adm., The Norwegian Institute of Technology, N-7034 Trondheim - NTH, Norway Telephone: 47 7 59 52 46 Telex: 55637 nthad n
July 15-16, 1985	Statistics and Pattern Recognition	Edinburgh, Scotland	Mr. P. R. Fisk, Dept. of Statistics, U. of Edinburgh, James Clerk Maxwell Building, The King's Buildings, Mayfield Rd., Edinburgh, EH9 3JZ
Nov. 18-20, 1985	Computer Architecture for Pattern Analysis and Image Database Managment	Miami Beach, Florida, USA	Steven L. Tanimoto, Dept. of Computer Science, FR-35, University of Washington, Seattle, WA 98195 USA
January 6-9, 1986	International Conference on Advances in Pattern Recognition and Digital Techniques	Indian Statistical Institute, Calcutta, India	Prof. D. D. Majumder, Elec. & Comm. Sciences Unit, Indian Stat. Inst., 203, B. T. Road, Calcutta 35, India Telephone: 52-6694 Telex: 21-2210 STAT IN
April 8-11, 1986	International Conference on Acoustics, Speech and Signal Processing	Tokyo, Japan	Secretariat, ICASSP 86 - Tokyo, c/o Simul International, Inc., Kowa Bldg., No. 9, 1-8-10, Akasaka, Minato-ku, Tokyo 107 JAPAN
October 28-31, 1986	Eighth International Conference on Pattern Recognition	Paris, France	Organized by AFCET and Sponsored by IAPR and Governmental and Industrial Sponsors, AFCET ICPR Secretariat, 156, Boulevard Pereire, F. 75017 PARIS Telephone: (1) 766 24 19 telex: 290 163 EURTEL Code 235

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