



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

NEWSLETTER

Editor

Josef Kittler
Dept. Electronic and Electrical Engineering,
University of Surrey,
Guildford GU2 5XH,
UK.

Telephone: (44 483 571281 x 2272)
kittler%jkvax@uk.ac.surrey.ee

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FROM THE EDITOR'S DESK

The current issue is a little shorter than anticipated because the IAPR Directory is not quite ready to go to print. We shall have to wait for this gripping reading until the June Newsletter. However, I am happy to report that all the other material I promised for this copy is there: A message from the President of IAPR, and a few snapshots from the Rome conference. And this time the readership of the Newsletter jumps up to almost fifteen thousand! How did we manage this dramatic increase in the IAPR membership? Rumour has it that our true membership figures have always been so impressive but not every member realised that he or she belonged to IAPR, especially in USA. They probably do not realise it even now but with this issue they are going to find out thanks to the new efforts of the IEEE Computer Society PAMI Committee to reach them.

The Editor



Prof Marty Levine, President IAPR

MESSAGE FROM THE PRESIDENT

During the past twelve months the International Association of Pattern Recognition has had to deal with a very serious crisis involving its biennial conference. Since this conference is the major activity of the IAPR, the significance of the change of venue from China to Italy cannot be understated. It was of course with great regret that the previous President of the IAPR, Pierre Devijver and the Executive Committee decided to transfer the conference to Rome. Hopefully, this affair has now been left behind us and we will again be able to welcome our Chinese colleagues to participate actively in the activities of the IAPR. Arranging the conference on such short notice was of course very difficult and Professor Stefano Levialdi of the University of Rome deserves a great deal of praise for the excellent job he did.

Since my appointment in Rome as the President of the IAPR, I have been involved in the selection of the various committee chairmen and the membership of the committees. This has not quite yet been completed and you will be informed of the make-up of these committees in the near future. In particular, I have formed a new

ad hoc committee under the Chairmanship of Professor Robert Haralick of the University of Washington to examine the future of the International Association for Pattern Recognition and to suggest creative improvements in our goals and operation. The committee has very loose terms of reference and its members therefore have free reign to make any suggestions that they might deem appropriate. I would like to invite you to write to Professor Haralick regarding any suggestions that you might have for him and his committee.

In my opinion, the main problem that the IAPR has at present is the need to attract more participants to its activities, and in particular the biennial conference. Specifically, we have seen a decided reduction of interest by our American colleagues in the activities of the IAPR. Since a very significant portion of the international activity in our field takes place in the United States, I see this as a serious deficiency. There are also certain indications that a similar situation is beginning to develop in Europe.

Since the biennial conference is our major focus at present, I feel that any solution to the above problem must deal with the conference. There has been much criticism that the conference is too diffuse in terms of the number of topics that it addresses. There have also been criticisms regarding the quality and number of papers. Many people are probably sympathetic to these viewpoints. However, in my opinion the solution is not to break the biennial conference into smaller separate conferences. The reason I feel this way is that most attendees of the IAPR conferences enjoy meeting their international colleagues, even though they may not actually be working in exactly the same technical areas. Therefore as a social event, a reasonably well attended conference is quite important to most people concerned with the field. It provides the loose bond that reminds us that we are all part of a more global activity. In fact, the IAPR is still the only existing international organization dedicated solely to computer vision and pattern recognition, and the conference is still the largest *international* forum of all existing conferences. Thus, one solution seems to be that we should have an umbrella conference under whose aegis several smaller specialized conferences could be held at the same time. In other words, all of the social events would be in common but each of the specialized conferences would have their own technical program committee and review structure. I am pleased to report that the next conference in Atlantic City will follow this format. At this time, the four conferences stated to be held there will be:

1. Computer Vision
2. Pattern Recognition Systems and Applications

3. Image, Speech and Signal Processing
4. Computer Architectures for Vision and Pattern Recognition

It also appears that the conference in 1992 which will take place in The Netherlands will follow a similar format.

I hope that this restructuring of the biennial conference will result in a revival of interest in the IAPR by those who have stopped participating in our activities. It is only by an honest and open exchange of opinions that we can improve the situation to the satisfaction of all our members and enhance the activities on the international scene.

BOOKSHELF

Handbook of Pattern Recognition and Image Processing

T Y Young and K S Fu, Eds., Academic Press, Orlando, Florida, 1985, ISBN 0-12-774560-2

In a fast evolving field like Pattern Recognition, any textbook is bound to be a little out of date already by the time of its publication. The Handbook of Pattern Recognition and Image Processing is not an exception, especially since it was published in 1986. So, recent developments in areas like edge detection and texture analysis are not included. Nevertheless, it remains a classical reference in the field and a worthwhile collection of information for anybody who is interested in it and requires a quick guide as to which methods and approaches have been (or at least had been, until 1986) used in various related subjects.

It consists of 27 chapters, each one written by a leading specialist in the corresponding field. In spite of all the different authors, there is very little overlap. The book has been edited in a comprehensive way so that the chapters follow a natural sequence and there is a general index at the back—an absolute necessity for a reference book! Inevitably, there is variability in the depth by which the various fields are covered: some authors give mathematical formulae and details, while others simply touch upon the various aspects of the subject they cover. Even so, there are plenty of references at the end of each chapter to guide the interested person in the right direction. After all, this is the purpose of a reference book!

The subjects covered, in the order presented in the book are as follows. In Part I, under the general title

Pattern Recognition: Statistical Pattern Classification, Cluster Analysis, Feature Selection & Extraction, Syntactic Pattern Recognition, Stochastic Languages and Problem Solving Methods for Pattern Recognition. In the second part, under the general title Image Coding, we have Image Enhancement & Restoration, Image Segmentation, 2-dim Shape Representation, Statistical Image Texture Analysis, Image Models, Computational Analysis of time-varying Images, 3-dim motion & structure from two perspective views and Computer Vision. In Part III with the title Systems & Architectures, there are: Image Database Systems, Cellular Logic Arrays & Parallel Architectures for Image Processing, Computer Vision & Pattern Perception and VLSI Array Architecture for Pattern Analysis & Image Processing. Finally, in Part IV, Applications, the included chapters are: Speech Recognition, Seismic & Underwater Acoustic Waveform Analysis, Methods of Biological Signal Processing, Character Recognition, Automatic Visual Inspection, Remote Sensing and Biomedical Image Analysis & Reconstruction from Projections—Computerized Tomography.

A worthwhile collection of subjects for the researcher and the teacher alike.

M Petrou

University of Surrey, UK

NEWS IN BRIEF

IFIP CONGRESS 1989 Preparations for the 11th World Computer Congress to be held in San Francisco 28 August - 1 September are well on the way. Over 360 papers were submitted from 40 countries. The USA led the way with more than 70 papers, followed by China, with over 45.

TC 13 - ASTRONOMY AND ASTROPHYSICS A Springer-Verlag volume entitled *Knowledge Based Systems in Astronomy*, A Heck and F Murtagh (Eds.), which is one of the first outputs of the IAPR TC 13 activities is now available from the Publisher and book-sellers.

PICTURES FROM THE 9TH ICPR

The following few photographs reminiscent of the great time some of us had a chance to partake at the IAPR 9th International Conference on Pattern Recognition in Rome last November were kindly made available by Prof Stefano Levialdi, Conference Chairman.



The opening session



A technical session



A poster session

CALLS FOR PAPERS

KNOWLEDGE BASED PATTERN RECOGNITION

Vienna, Austria - May 26-27, 1989

Program

The theme of the 13th meeting of the Austrian Association for Pattern Recognition is knowledge based pattern recognition. Papers either in English or German are invited on this topic.

Deadlines

April 15, 1989	Abstract
May 15, 1989	Authors notified
July 15, 1989	Camera-ready manuscript

Paper Submission

Dipl Ing Dr A Pinz
Universitat fur Bodenkultur
Peter Jordan Strasse 82
A-1190 Wien
Austria

4TH LATIN AMERICAN SYMPOSIUM ON REMOTE SENSING

Bariloche, Argentina - November 20-24, 1989

Program

The Society of Latin American Specialists in Remote Sensing extend their invitation to the international technical and scientific community to participate in this symposium which is intended to promote international cooperation in research, development and application of remote sensing technology. All aspects of this multidisciplinary field will be discussed including: digital image processing, cartography, remote sensing systems and instruments, and applications in agronomy, soils, forestry, geology, vegetation, ecology, water resources, oceanography, meteorology and environmental analysis.

Deadlines

April 28, 1989	Abstract (300 words, 2 copies)
May 31, 1989	Authors notified
July 31, 1989	Camera-ready manuscript

Paper Submission

CICELPA - INTI
Secretaria del 4 Simposio
Latinoamericano de Sensores Remotos
C.C. 157 - (1650) San Martin
Provincia de Buenos Aires
Republica Argentina

**IEEE WORKSHOP ON
VISUAL LANGUAGES**

Rome, Italy - October 4-6, 1989

Program

The workshop will comprise papers in the following areas:

- Visual Programming
- Theory and Practice of Icons
- Visualization in Design of Systems
- Visualization in Scientific Computation
- Graphical Interfaces
- Intelligent Environments

Deadlines

April 30, 1989 Full papers (5000 words, 5 copies)
June 30, 1989 Authors notified
August 1, 1989 Camera-ready manuscript

Paper Submission

Prof S Levialdi
Dip. Matematica
University of Rome
P.le A Moro 2
00185 Rome
Italy

**3RD INTERNATIONAL SYMPOSIUM ON
DEFECT RECOGNITION AND IMAGE
PROCESSING FOR RESEARCH AND
DEVELOPMENT OF SEMICONDUCTORS**

Tokyo, Japan - September 22-25, 1989

Program

Contributed papers are solicited from the following areas: visualisation and characterization of defects in bulk semiconductor materials as well as epitaxially grown crystals; interfacial defects between substrate and epitaxial layer; mapping of imperfect areas for characterization of devices; new techniques for detection and recognition of defects and their physical significance; algorithms for image processing.

Deadlines

May 15, 1989 Summary
July 15, 1989 Authors notified
September 22, 1989 Camera-ready manuscript

Paper Submission

Prof Tomoya Ogawa
Department of Physics
Gakushuin University

Mejiro
Tokyo 171
Japan

INTELLIGENT AUTONOMOUS SYSTEMS 2

Amsterdam, The Netherlands - December 11-14, 1989

Program

The conference will comprise invited as well as submitted papers in the following areas:

- Sensor data interpretation
- Neurocomputing
- Artificial Intelligence and Sensors
- Tools for autonomous system design
- Applications

Deadlines

May 1, 1989 Summary (four A4 pages)
July 1, 1989 Authors notified
September 1, 1989 Camera-ready manuscript

Paper Submission

IAS-2 Conference Secretariat
PO Box 41882
NL-1009 D B Amsterdam
The Netherlands

**6TH ISRAELI CONFERENCE ON
ARTIFICIAL INTELLIGENCE
AND COMPUTER VISION**

Tel-Aviv, Israel - December 26-27, 1989

Program

The conference is the joint annual meeting of the Israeli Association for Artificial Intelligence, and the Israeli Association for Computer Vision and Pattern Recognition, which are affiliates of the Israeli Information Processing Association. Papers addressing all aspects of AI and Computer Vision, including, but not limited to, the following topics, are solicited:

- AI and education
- AI languages, logic programming
- Automated reasoning
- Cognitive modeling
- Expert systems
- Inductive inference, learning and knowledge acquisition
- Knowledge theory, logics of knowledge
- Natural language processing
- Planning and search

- Image Processing and Pattern Recognition
- Image Analysis and Computer Vision
- Visual Perception
- Applications
- Robotics

Deadlines

June 1, 1989 Full papers (4 copies)
 August 1, 1989 Authors notified

Paper Submission

(Vision)

Dr. Y. Yeshurun
 6th IAICV
 Dept of Computer Science
 Tel Aviv University
 69978 Tel Aviv
 Israel

(AI)

Dr J Rosenschein
 6th IAICV
 Dept Computer Science
 The Hebrew University
 91904 Jerusalem
 Israel

IEEE WORKSHOP ON INTERPRETATION OF 3D SCENES

Austin, Texas, USA - November 27-29, 1989

Program

The interpretation of 3D scenes remain a difficult problem for many application areas and has attracted the attention of researchers in many disciplines. The intent of this workshop is to bring together vision researchers to discuss current work in scene interpretation, representation, matching and sensing. A variety of sessions will be devoted to different aspects of scene interpretation research. The number of presentations will be limited, so there will be ample opportunity for discussion. Papers are invited on all aspects of scene interpretation by human and machine, including:

- General 3D interpretation problems
- Internal 3D representation and modelling
- Sensing 3D scene structure
- Applications in navigation, industry, enabling technology, etc.
- Matching sensed scene structure to internal representations

Deadlines

June 15, 1989 Full papers (25 pages, 3 copies)
 August 15, 1989 Authors notified
 September 30, 1989 Camera-ready manuscript

Paper Submission

Eric Grimson
 Artificial Intelligence Lab
 MIT
 545 Technology Square
 Cambridge
 MA 02139

10TH INTERNATIONAL CONFERENCE ON PATTERN RECOGNITION

Atlantic City, NJ, USA - June 3-7, 1990

Program

The 10th ICPR, sponsored by the IEEE Computer Society and the International Association for Pattern Recognition, will be organized as a set of 4 specialty conferences, each dealing with a different topic but held in the same place at the same time. The opening session as well as all social events will be common to the four conferences. The titles of the individual conferences will be:

- 1 - Computer Vision
- 2 - Pattern Recognition Systems and Applications
- 3 - Image, Speech and Signal Processing
- 4 - Computer Architectures for Vision and Pattern Recognition

Each conference will have its own program committee and will consist of a single track of paper presentations, with the papers published in separate proceedings volumes. There will be a basic registration fee which will entitle a participant to attend one subconference of choice. For small supplementary fees, attendees will be able to attend (and receive the proceedings for) any of the other conferences as well. Each conference will have about 50 quality paper presentations, as well as panel discussions and poster displays. Based on previous conferences, a total attendance of close to 1000 persons is expected from all over the world.

Paper Submission

Detailed instructions for paper submission will be published in early 1989 and will appear in the next issue of the IAPR Newsletter.

TUTORIALS

University of Surrey, Guildford,
England- September 14-15, 1989

STATISTICAL PATTERN RECOGNITION: Introduction

University of Surrey, Guildford,
England- September 11-13, 1989

The course sponsored by the IAPR Technical Committee TC1 will discuss fundamental methods of statistical pattern recognition. Several example classes will be aimed at familiarizing the participants with the material presented. The course will include seminars on application of pattern recognition methods to specific problems in which a step by step description of the design of practical pattern recognition systems will be outlined.

The topics covered will include *elements of statistical decision theory, nonparametric pattern classification, learning machines, probability density function estimation, classification error probability estimation, feature selection, feature extraction and cluster analysis.*

Course textbook: P A Devijver and J Kittler, Pattern Recognition: A statistical approach, Prentice/Hall, Englewood Cliffs, NJ, 1982.

Course lecturers: Dr P A Devijver and Dr J Kittler

STATISTICAL PATTERN RECOGNITION: Advanced Topics

The course will feature a number of advance topics in statistical pattern recognition. In particular, it will focus on the use of contextual information in decision making with the emphasis on Markov models. The methodology will be illustrated on applications in speech recognition, image restoration, image segmentation, computer vision and character recognition.

The topics covered will include: *role of context, Markov chain, Markov mesh and Markov random field models of apriori world knowledge, Gibbs distributions, hidden Markov models, elements of compound decision theory, Baum's algorithm, Derin's algorithm, Viterbi algorithm, labelling in hidden Markov meshes and random fields, discrete relaxation, probabilistic relaxation, learning contextual relationships, learning Markov models.*

Course lecturers: Dr P.A.Devijver and Dr J.Kittler

For further information and registration form concerning either of the two courses write to:

Mrs Marion Harris
Department of Electronic
and Electrical Engineering
University of Surrey
Guildford GU2 5XH
England
tel.:(+44 483) 571281 ext. 2271

CALENDAR OF EVENTS

Date	Event	Location	Sponsor/Information
April 10-12, 1989	International Workshop on Industrial Applications of Machine Intelligence and Vision (MIV-89)	Roppongi, Tokyo, Japan	Prof Mitsuru Ishizuka (General Chair of MIV-89), Institute of Industrial Science, University of Tokyo, 7-22-1, Roppongi, Minato-ku, Tokyo 106, Japan
April 24-28, 1989	The International Congress on Optical Science and Engineering	Palais des Congrès, Porte Maillot, Paris, France	Amanda Caillot, Conference Coordinator, Europtica Services I.C., 16 avenue Bugeaud, 75116 Paris, France
May 14-19, 1989	1989 IEEE International Conference on Robotics and Automation	The Registry Resort, Scottsdale, Arizona, USA	IEEE Robotics and Automation, PO Box 3216, Silver Spring, MD 20901, USA
May 23-26, 1989	IEEE 1989 International Conference on Acoustics, Speech, and Signal Processing	Glasgow Forum Hotel, Glasgow, Scotland, United Kingdom	Peter M Grant, Dept. Electrical Engineering, University of Edinburgh, The King's Buildings, Edinburgh EH9 3JL, Scotland, UK
May 26-27, 1989	Knowledge Based Pattern Recognition	University of Agriculture, Vienna, Austria	Dipl Ing Dr A Pinz, Universitat fur Bodenkultur, Peter Jordan Strasse 82, A-1190 Wien, Austria

June 4-8, 1989	IEEE Computer Society Conference on Computer Vision and Pattern Recognition	Sheraton Grand Hotel on Harbor Island, San Diego, California, USA	The Computer Society of IEEE, 1730 Massachusetts Avenue, N.W., Washington, DC 20036-1903, USA
June 19-22, 1989	7th Workshop of the European Society for the Study of Cognitive Systems	St-Maximin-la-Stebaume, Provence, France	Dr G J Dalenoort (ESSCS), Institute of Experimental Psychology, University of Groningen, PO Box 14, 9750 AA Haren, The Netherlands
June 19-22, 1989	The 6th Scandinavian Conference on Image Analysis	University of Oulu, Finland	Prof Matti Pietikäinen, 6SCIA Chairman, Dept Electrical Engineering, University of Oulu, SF-90570 Oulu, Finland
June 19-23, 1989	Vision Interface '89	London, Ontario, Canada	Irene A Gargantini, General Chairman, Department of Computer Science, Middlesex College 375, University of Western Ontario, London, Ontario N6A 5B7, Canada
June 27-30, 1989	2nd Conference of the International Federation of Classification Societies	Charlottesville, VA, USA	IFCS-89, Dept Mathematics, University of Virginia, Charlottesville, VA 22903, USA
June 27-30, 1989	Computer Graphics International 89	University of Leeds, United Kingdom	Mrs F J Johnson, CGI89 Secretariat, Commercial Office, University of Leeds, Leeds LS2 9JT, United Kingdom
July 18-20, 1989	3rd International Conference on Image Processing and its Applications	University of Warwick, United Kingdom	IEE Secretariat, Conference Services, Savoy Place, London WC2R 0BL, United Kingdom
August 21-25, 1989	NATO Advanced Research Workshop on Mapping and Spatial Modelling for Navigation	Denmark	Prof L F Pau, Technical University of Denmark, Building 348/EMI, DK 2800 Lyngby, Denmark
August 31 - Sept 2, 1989	3rd International Conference on Computer Analysis of Images and Patterns	Leipzig, DDR	Präsidium KDT, WGMA, Conference Secretary of CAIP '89, Clara-Zetkin-Str 115/117, Berlin, DDR
September 4-8, 1989	5th European Congress for Stereology	Freiburg im Breisgau, West Germany	Dr O Leder, 5ECS, Anatomisches Institut, Albertstr. 17, D-7800 Freiburg im Breisgau, West Germany
September 5-8, 1989	International Conference on Image Processing (ICIP '89)	Pan Pacific Hotel, Singapore	Meeting Planners Pte Ltd, 100 Beach Road 33-01, Shaw Towers, Singapore 0718, Republic of Singapore
September 20-22, 1989	5th International Conference on Image Analysis and Processing	Positano, Italy	Dr Gabriella Saniti di Baja, Chairman 5ICIAP, c/o Istituto di Cibernetica, CNR, 80072 Arco Felica, Naples, Italy
October 4-6, 1989	1989 IEEE Workshop on Visual Languages	Hotel Michelangelo, Rome, Italy	Prof S Levialdi, Dip. Matematica, University of Rome, P.le A Moro 2, 00185 Rome, Italy
October 17-18, 1989	1st IEE International Conference on Artificial Neural Networks	IEE, Savoy Place, London, United Kingdom	IEE, Conference Services, Savoy Place, London WC2R 0BL, United Kingdom
November 20-24, 1989	4th Latin American Symposium on Remote Sensing	San Carlos de Bariloche, Rio Negro, Argentina	CICELPA-INTI, Secretaria del 4 Simposio Latinoamericano de Sensores Remotos, C.C. 157-(1650) San Martin, Provincia de Buenos Aires, Republica Argentina
November 27-29, 1989	IEEE Workshop on Interpretation of 3D Scenes	Austin Marriott at the Capital, Austin, TX, USA	Eric Grimson, Artificial Intelligence Lab, MIT, 545 Technology Square, Cambridge, MA 02139, USA