FROM THE EDITORS DESK

One of the problems which has always haunted the Editor of the IAPR Newsletter is the scarcity of material submitted for publication. While the first reaction might be to postpone the production of next issue until the available pages are filled with print, this necessarily introduces an element of randomness in the publication schedule which can only discourage the inflow of topical material in the future. I intend to overcome this chicken and egg situation by introducing a rigid production schedule, with the Newsletter appearing in March, June, September and December come what may. So if you receive a blank copy then at least you will know that the Editor is not to be blamed (at least not entirely).

On a more constructive note, I would like to see the Newsletter become a forum for the ordinary IAPR member to express his or her views, pleasure or displeasure concerning any aspect of IAPR activities or any matter affecting the IAPR community. Are you satisfied with the format of IAPR conferences? What type of activities should IAPR engage in? How can the Newsletter be improved? Your contributions should be received well
before the published deadlines for news copy to have a reasonable chance of appearing in the next issue.

This issue of the Newsletter is almost entirely devoted to the publication of the new IAPR directory as the task of appointing members of IAPR standing and ad-hoc committees and chairmen of technical committees has just been completed. Any omissions, errors or changes should be notified as soon as possible so that they can be incorporated in subsequent updates.

The Editor

NEWS IN BRIEF

K S Fu Award Fund The donations received in response to the K S Fu Award Fund appeal launched at the 8ICPR in Paris last October now total more than US$ 21000.

TC13: Pattern Recognition and Astronomy A new IAPR Technical Committee has been formed and Prof V Di Gesù, University of Palermo, Italy has agreed to serve as its first chairman. The objective of the committee will be to bring pattern recognition to bear on problems in astronomy and astrophysics to a greater extent.

IAPR Officers Election Procedure The newly appointed Constitution and Bylaws Committee headed by Prof J R Ullmann (UK) faces the difficult task of reviewing the workings of the IAPR Officers election procedures and the terms of reference of the Nominating Committee.

Expert Systems and Pattern Recognition In October 1987 the IAPR will co-sponsor its first event in the USSR. A workshop on "Expert Systems and Pattern Recognition" is being organized in Novosibirsk at the initiative of Prof N Zagoruiko. More information should be available in the next issue of this Newsletter.

Errors and Failures in Vision Systems A one day workshop on Errors and Failures in Vision Systems is being organized by TC8. The workshop will be held in London on 12 June 1987 in conjunction with the International Conference on Computer Vision. Further information may be obtained from Prof S Tsuji, TC8 Chairman.

Conference CoSponsorships IAPR is to co-sponsor the 4th BPRA International Conference on Pattern Recognition to be held in Cambridge, England, March 28-30, 1988 and the International Workshop on Artificial Intelligence and Industrial Applications scheduled to take place in Hitachi-City, Japan, on May 25-27, 1988.

PRESIDENTIAL MESSAGE

Over the last month I have had the privilege of appointing members to various positions within the Association. The new appointments I have had the pleasure of making reflect the appointees' willingness to devote time and energy to IAPR activities and I wish to thank them in advance for their effort and dedication. Standing Committee members and Technical Committee chairmen are listed elsewhere in this Newsletter.

As an old timer of the IAPR Executive Committee I have heard rather frequently the criticism that members were not enough, if at all, aware of activities organized under the auspices of IAPR. I had these remarks in mind at the time I appointed the members of the Publication and Publicity Committee, many of whom are journal editors and have agreed to publish IAPR information in their journals. Let me briefly summarize the situation. In the first place, this Newsletter is, and remains our preferred medium for exchanging information within IAPR and it goes without saying that its editor, Dr J Kittler is eager to receive information from you.

The distribution of the Newsletter is confined, however, to our current membership of 21 countries. A probably wider, though overlapping dissemination of information can be achieved via the editors of "Pattern Recognition Letters", Profs. E Backer and E Gelsema. PRL is also an IAPR official publication and it should probably be recalled that IAPR has a contractual agreement with North-Holland that up to six pages per issue are available for IAPR information. In addition, Profs M Kunt and M Wajskop who are respectively the editors of "Signal Processing" and "Speech Communication" have also kindly agreed to publish IAPR announcements in their journals provided, of course, that these can be of interest to their own readership.

These are currently the means available for you to let everybody know of your activities, and I cannot but encourage you to take advantage of these facilities.

On many occasions in the past, I have expressed my concern that IAPR is still much too small. It is therefore with the greatest pleasure that I learned that our Secretary, Prof M J B Duff had received an application for membership from Portugal. I do not wish to anticipate the decision of the Governing Board regarding this application (although I am quite optimistic). Instead I like to take it as a sign that IAPR remains attractive to non-member countries and I urge the Membership Committee to arouse other applications.

Pierre Devijver
President
WHITHER THE ICPR'S?

Do we still want large, multiple parallel session conferences in the traditional pattern of the Association's major, biennial event? This topic was discussed at length by the Executive Committee and by the Governing Board when they met during the Paris International Conference on Pattern Recognition during October.

The choice is certainly not as simple as it may seem on the surface. On the one hand, there would seem to be good arguments supporting the view that a large, international organisation should meet at least occasionally in some way which brings together a substantial fraction of the membership; on the other hand, the sheer size of the group involved forces the meeting to be held in large, impersonal surroundings and makes social functions, such as the Conference Banquet, too large to be particularly enjoyable.

Parallel sessions are a mixed blessing. In theory, one has the choice between concentrating on one's own special interests (and, therefore, mixing with familiar colleagues) and, alternatively, broadening horizons by deliberately attending 'foreign' sessions. In practice, it doesn't seem to work that way since specialist interests tend to be thinly catered for and the 'broad' approach requires too high a level of personal organisation and careful timing to be really practicable.

Various alternative proposals have been made. One possibility which is being considered is to select a few large topic areas and to structure the ICPR as an 'umbrella' for three or four otherwise separate conferences. These would differ from the more familiar parallel sessions in that attempts would be made to keep apart each of the groups of participants which would then be more coherent in themselves, although visits to other conferences would not be ruled out. No attempt would be made to co-ordinate individual programmes with the others and it would not necessarily follow that all the conferences would be co-located. It might even be possible to offer some workshops in the same general geographical area and at about the same time as the main meetings, so that participants could attend a specialist workshop as well as the less specialised conference.

Another possibility would be to abandon the idea that IAPR should attempt to meet as a body and instead to concentrate on actively sponsoring a wider range of nationally organised events in many different countries. On the whole, one would expect these meetings to be smaller and easier to mount. The Association would then devote its energies to publicising the events and to giving help in selecting speakers, refereeing, publishing proceedings, funding, and so on.

The Conference and Meetings Committee will be considering points such as these in the near future and would be pleased to hear your views. Any comments you would like to make can be sent to the Chairman of that Committee, to me or to the Editor of this Newsletter (if you would like them published). Adverse comments will not be seen as criticism of the hard-working organisers of previous ICPRs who have always managed to make a success of their conferences. The Association has grown to a size and age when we should be re-examining our customs to see if they are still appropriate to our increasing maturity. Please spare a little time to help your committees do those things you would like to see done. Your opinions will be valued and will be taken into account when future meetings are being planned.

Michael Duff

FINPRIT

The Finnish Programme for Research and Development in Information Technologies (FINPRINT) initiated by the Finish Ministry of Trade and Industry has reached its midway point. The programme which started in 1984 has a total budget of FIM 100 million (US$ 19 million). About 70% of the expenses are covered by the Technology Development Centre of Finland and most of the remaining 30% by the 30-40 Finnish companies participating in the programme.

The main goal is to improve the international competitiveness of Finnish industry in information technology. Co-operation between industry, universities and research institutes is an integral part of the programme.

The work essentially consists of applied technical research, and typical results will be prototypes and demonstration systems. The results will be the property of the research institutes, but the participating companies will be authorised to use the results in a specified manner.

The FINPRINT programme has five subprogrammes. Each of them consists of several projects, 21 in all. For each project there is a Technical Support Group representing research institutes and companies, and there is an Executive Committee for each subprogramme.

There is a Programme Board to promote co-operation within the programme. The subprogramme directors and the chairmen of the Executive Committees (representing participating companies) are members of the Programme Board.
The main research organizations are: the laboratories of the Technical Research Centre of Finland in Helsinki, Espoo, Tampere and Oulu, Helsinki University of Technology, the University of Oulu, Tampere University of Technology and the University of Tampere.

Some of the FINPRIT projects work in co-operation with the Nordic data technology programme. The researchers have many contacts on the personal level with the European COST, ESPRIT, ALVEY and EUREKA programmes.

The aim of the subprogramme in PATTERN RECOGNITION is to develop and acquire expertise in its industrial application. These techniques seem to be a significant competitive factor in several application areas.

Digital image processing

Low cost-image processing workstation prototypes are being developed for various application areas. In the initial phase of the project the emphasis has been on the development of image memories, an image processor based on parallel signal processors and software. The results are being used to develop image workstations with efficient PC and engineering workstation hardware.

Computer Vision

Two main objectives were selected from the vast field of computer vision technology: a laser range-finding system and a visual servo system. The laser range finder uses time-of-flight measurements. Scene analysis software is used to model the measured 3D environment. The results will be used to control robots and manipulators in complicated environments. The aim of the visual feedback system is the exact positioning of a robot arm using visual information.

Computer aided radiotherapy

This project is developing dose planning algorithms and applying them in a treatment modelling system. 3D image processing and manipulation is needed to make correct dose plans and to visualize the calculated results. The main aim is to improve the accuracy of radiotherapy.

Pattern recognition in ECG

An automatic analysis system is being developed for electrocardiograph signals. In the initial phase the emphasis has been on developing new pre-processing algorithms and on verification methods for ECG analysis systems. Later on, automatic pattern recognition and knowledge-based analysis methods are to be included.

COMPUTER VISION
FOR PING-PONG PLAYING ROBOTS

A robot ping-pong contest featured in the programme of EUROMICRO 86 held in Venice last September. The organizer of the competition, Dr John Billingsley of Portsmouth Polytechnic, UK, wrote the following amusing report about the contest which is reprinted here with permission from the IFIP Newsletter.

*Venice is a city of canals and footpaths. Road traffic ceases at the huge car park at the end of the two mile bridge from the mainland. It took three long journeys with a clanking handcart to transport the Brussels robot from van to venue, and sixty thousand lira to hire a boat to take it back. In contrast, Mr John Knight's robot amply repaid his efforts to make it portable, as he carried it with ease half a mile over four humped-backed bridges from Piazzale Roma to Ca'Foscar.

The eight-strong team from Tampere University, Finland had a much easier transportation problem. They had nothing to carry at all. Despite two days of frantic telephoning, the customs officers of Milan still refused to release the machine. The Finns had made the mistake of engaging a shipping firm for transport and marking an enormous value on the insurance form. Many other robots failed to make the journey.

Robots in Conflict

The Belgian team from Free University of Brussels described their machine, OSCAR. Two CCD cameras analyse the field of view. Their images are processed to remove static objects, leaving the ball as the clear focus of interest. Since the cameras are free standing to either side of the robot, calibration is necessary to coordinate their fields of view. One accidental nudge to a camera tripod, and the lengthy process has to be repeated.

Their bat was carried on a cartesian frame mechanism, in X-Y plotter style. To reduce the necessary stringing and to halve the inertial load, each side of the horizontal cross bar was lifted by its own servomechanism. Ten centimeters or so behind the frame, a second frame was mounted. A stalk on the back of the bat enabled the bat angle to be set by the relative displacement of the two frames. Unfortunately, the second frame was not working. Their spokesman Hugo van Hamme warned the audience not to expect too much,
explaining that OSCAR stood for *Our System Crashes At Random*.

John Knight (UK) started to describe his robot Charlie, as a cartesian frame surmounted by a vision system head adorned with ears. The vision system is elementary but most effective. The image is swept vertically across four photocells. The outer ones provide coarse positioning, and the head is driven laterally until the image is balanced between the centre cells. The head has in fact a stereo facility.

In mid explanation, John Knight waved a ping-pong ball mounted on a cane across the centre of the table, and the audience gasped as Charlie burst spontaneously into life to follow it.

**Highly Strung Robot**

The Belgians were the first to face service. With a final flurry, their robot was tuned up for action, they were ready for play. As the server button was pressed, their robot leaped into motion. Unfortunately, the two sides of the crossbar leaped in opposite directions, as the servosystems disagreed violently. Following a sharp twang, the team asked for a few minutes to repair their machine.

To fill in, a few friendly serves were aimed at Charlie. Vertical positioning was variable on the faster serves, but Charlie's horizontal control was perfect. To a slow serve, Charlie produced a perfect delivery, which brought thunderous applause.

At last OSCAR was ready to try again, repaired, restrung and recalibrated. Even before the ball could be launched, however, it leaped into another self-destructive paroxysm, which left Charlie the clear winner.

The 1987 final will be held 14-17 September at EUROMICRO 87 in Portsmouth, England.”

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**Members of the Governing Board**

<table>
<thead>
<tr>
<th>Country</th>
<th>Member</th>
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<tbody>
<tr>
<td>Austria</td>
<td>Dr W Kropatsch</td>
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<td>Belgium</td>
<td>Dr P A Devijver</td>
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<td>Canada</td>
<td>Dr T Kasvand</td>
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<td>People's Republic of China</td>
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<td>Denmark</td>
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<td>Federal Republic of Germany</td>
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<td>France</td>
<td>Prof H-H Nagel</td>
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<td>Hungary</td>
<td>Prof J-P Haton</td>
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<td>India</td>
<td>Dr G Kosman</td>
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<td>Israel</td>
<td>Prof D Dutta Majumder</td>
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<td>Dr S Peleg</td>
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<td>Japan</td>
<td>Prof S Levialdi</td>
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**Executive Committee**

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<td>President</td>
<td>Dr P A Devijver</td>
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<td>First Vice-President</td>
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<tr>
<td>Second Vice-President</td>
<td>Prof M Levine</td>
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<tr>
<td>Past-President</td>
<td>Prof T Sakai</td>
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<tr>
<td>Secretary</td>
<td>Prof M J B Duff</td>
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<td>Treasurer</td>
<td>Prof H Freeman</td>
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<tr>
<td>Past-Chairman 8ICPR</td>
<td>Prof J-C Simon</td>
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<td>IFIP Representative</td>
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**Standing Committees**

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<td>Awards</td>
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<td>Prof M D Levine</td>
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<td>Prof H-H Nagel</td>
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<tr>
<td>Conference and Meetings</td>
<td>Prof R M Haralick (Chairman)</td>
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<td>Prof P-E Danielsson</td>
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<td>Prof M Takagi</td>
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<tr>
<td>Constitution and</td>
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**IAPR DIRECTORY**

Please send any corrections or changes to this directory to the IAPR Secretary Prof M J B Duff. His full address is listed in the directory.
Bylaws
Prof J K Aggarwal
Prof D Dutta Majumder
Prof H Kasmierczak
Prof E Oja

Membership
Prof M J B Duff (Chairman)
Prof E Backer
Dr A Guzman
Dr W G Kropatsch
Prof S Levialdi
Prof J-C Simon

Nominating
Prof T Sakai (Chairman)
Prof J K Aggarwal
Prof J-O Eklundh
Prof J-P Haton
Prof H Freeman

Publication and
Prof E Backer (Co-chairman)
Prof E Geleema (Co-chairman)
Dr T Kasvand
Dr J Kittler
Prof M Kunt
Prof M Nagao
Prof M Wajskop

Publicity

Newsletter Editor

Technical Committee Chairmen
Vice-President in charge
Prof P-E Danielsson
Dr J Kittler

TC1 Statistical Pattern Recognition
Techniques
Dr M Kidode

TC2 Structural and Syntactical
Pattern Recognition
Prof A Sanfeliu

TC3 Image Pre-Processing Techniques
Dr W G Kropatsch

TC4 Image Understanding Techniques
Prof S Tsuji

TC5 Benchmarking and Software
Prof M Takagi

TC6 Special-Purpose Architectures
Prof C C Li

TC7 Applications in Remote Sensing
Dr M Kidode

TC8 Applications in Industry
Prof S Tsuji

TC8 General Applications in Industry
subcommission

TC9 Biomedical Pattern Recognition
Prof S N Sridhara

TC10 Applications in Map and
Line Drawing Processing
Prof H Niemann

TC11 Applications in Text Processing
Prof V Di Gesù

TC12 Automatic Speech Recognition

TC13 Pattern Recognition in Astronomy

National Member Organisations

Austria
Austrian Working Group for Pattern
Recognition of the Austrian Computer
Society, and the Austrian Association
for Cybernetics

Cat A1
About 40 members
Rep
Dr W Kropatsch

Belgium
Pattern Recognition Contact Group of
the SOGESCI

Cat A1
About 45 members
Rep
Dr P A Devijver

Canada
Canadian Image Processing and Pat-
tern Recognition Society

Cat B
About 220 members
Rep
Dr T Kasvand
Prof C Y Suen

People's Republic of China
Pattern Recognition and Machine In-
telligence Committee of the Chinese
Association of Automation

Cat A2
About 100 members
Rep
Prof T Chang

Denmark
Danish Pattern Recognition Society

Cat A1
44 members
Rep
Prof P W Becker

Federal Republic
of Germany
Deutsche Arbeitsgemeinschaft Fur
Mustererkennung

Cat B
About 450 members
Rep
Prof H Kasmierczak
Prof H-H Nagel

Finland
Pattern Recognition Society of
England

Cat A2
130 members
Rep
Prof T Kohonen

France
Pattern Recognition and Artificial In-
telligence Group of AFCET (Associ-
ation Francaise pour la Cybernetique
Economique et Technique)

Cat B
About 300 members
Rep
Prof J-P Haton
Prof J-C Simon

Hungary
Section of Artificial Intelligence and
Pattern Recognition of the John
Von Neumann Society for Computer
Science

Cat A1
About 50 members
Rep
Dr G Kosman

India
Indian Unit for Pattern Recognition
and Artificial Intelligence (IUPRAI)

Cat A1
About 50 members
Rep
Prof D Dutta Majumder

Israel
The Israel Working Group on Pattern
Recognition and Image Processing of
the Information Processing Association
of Israel
<table>
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<th>Region</th>
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<td>Svenska Sallskapet for Automatiserad Bildanalys (SSAB) (Swedish Society for Automated Image Analysis)</td>
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<td>Switzerland</td>
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<tr>
<td>United States of America</td>
<td>IEEE Computer Society</td>
<td>900</td>
</tr>
</tbody>
</table>

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Università di Palermo  
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I-90123 Palermo  
Italy  
OF:+39 91 6162824/332977 TE:911051 IFCI I
CALLS FOR PAPERS

SYMPOSIUM ON IMAGE PROCESSING AND ROBOTICS FOR MICROSCOPY

Winnipeg, Manitoba, Canada - June 16-19, 1987

Program

The meeting is organized by the Microscopical Society of Canada. Contributions are invited on all aspects of image processing and robotics relating to microscopy.

Deadlines

April 1, 1987 Paper abstract

Contact

Prof R. Gordon
Departments of Botany and Radiology
University of Manitoba
Winnipeg
Manitoba
Canada R3T 2N2

1987 WORKSHOP ON COMPUTER ARCHITECTURE FOR PATTERN ANALYSIS AND MACHINE INTELLIGENCE

Seattle, Washington, USA - October 5-7, 1987

Program

The workshop is sponsored by the IEEE Computer Society. Contributions are invited in the following topic areas:

- Image processing architectures
- Architectures for inference engines and rule-based systems
- Knowledge based machines and systems
- VLSI and systolic implementations
- Parallel algorithms for vision
- Parallel matching and reasoning algorithms

Deadlines

April 15, 1987 Full papers
June 1, 1987 Authors notified
July 15, 1987 Camera-ready manuscripts

Address for Paper Submission

Charles R. Dyer
Department of Computer Science
University of Wisconsin
1210 West Dayton St.
Madison, WI 53706
USA

BPRA 4th INTERNATIONAL CONFERENCE ON PATTERN RECOGNITION


Program

The conference is organized by the British Pattern Recognition Association and co-sponsored by the IAPR through Technical Committee TC1. The programme will comprise invited and contributed papers on all aspects of pattern recognition and image processing including hardware and applications. A special focus will be on:

- Statistical and structural pattern recognition
- Algorithms for image analysis and computer vision
- Special architectures and VLSI implementations
- Knowledge based methods in image and speech understanding
- Applications in
automatic inspection and robotics
medicine
speech and waveform processing
remote sensing
document and text processing

Deadlines
Sept 30, 1987 Full papers (4000 words, 3 copies)
October 30, 1987 Authors notified
Nov 30, 1987 Camera-ready manuscripts

Paper Submission and Further Information
Dr J Kittler
Department of Electronic and Electrical Engineering
University of Surrey
Guildford GU2 5XH
England

TUTORIALS

STATISTICAL PATTERN
RECOGNITION: Introduction
University of Surrey, Guildford,
England- October 5-7, 1987

The course 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 lecturers: Dr P A Devijver and Dr J Kittler
For further information and registration form write to:
Miss Susan Webber
Building R25
SERC Rutherford Appleton Laboratory
Chilton
Didcot OX11 0QX
England

STATISTICAL PATTERN
RECOGNITION: Advanced Topics
University of Surrey, Guildford,
England- October 8-9, 1987

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 write to:
Miss Susan Webber
Building R25
SERC Rutherford Appleton Laboratory
Chilton
Didcot OX11 0QX
England

CALENDAR OF EVENTS

<table>
<thead>
<tr>
<th>Date</th>
<th>Event</th>
<th>Location</th>
<th>Sponsor/Information</th>
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<tr>
<td>March 30-April 3, 1987</td>
<td>1987 IEEE International Conference on Robotics and Automation</td>
<td>Radison Hotel and Civic Center, Raleigh, NC, USA</td>
<td>Hary Hayman, 738 Whitaker Terrace, Silver Spring, MD 20901, USA</td>
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<tr>
<td>Date</td>
<td>Event</td>
<td>Location</td>
<td>Organizer/Details</td>
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<tr>
<td>April 22-24, 1987</td>
<td>Computer Analysis of Images and Patterns</td>
<td>Palast Hotel, Berlin, German Democratic Republic</td>
<td>CAIP'87 Conference Secretariat, KDT, Prasidium, WGMA, Koll. Muller, Clara Zetkin Strasse 115/117, 1086 Berlin, German Democratic Republic</td>
</tr>
<tr>
<td>April 27-29, 1987</td>
<td>International Symposium on Defect Recognition and Image Processing in III-V Compounds</td>
<td>Monterey, California</td>
<td>Continuing Education in Engineering, University Extension, University of California, 2223 Fulton Street, Berkeley, CA 94720, USA</td>
</tr>
<tr>
<td>June 2-5, 1987</td>
<td>5th Scandinavian Conference on Image Analysis</td>
<td>Grand Hotel, Salt-sjobaden, near Stockholm, Sweden</td>
<td>Dr. Torleiv Orhaug, Conference Chairman, National Defense Research Institute, P.O.Box 1165, S-581 11 Linkoping, Sweden</td>
</tr>
<tr>
<td>June 22-26, 1987</td>
<td>Information Processing in Medical Imaging</td>
<td>Utrecht, The Netherlands</td>
<td>Cornelia N. de Graf, University Hospital, K.73078, Catharinesingel 101, 3511 EGV Utrecht, The Netherlands, Tel: +31 30 372846</td>
</tr>
<tr>
<td>August 19-21, 1987</td>
<td>IEEE Workshop on Visual Languages</td>
<td>Linkoping, Sweden</td>
<td>Erland Jungert, FFV Elektronik AB, Agatan 22, S-582 22 Linkoping, Sweden</td>
</tr>
<tr>
<td>Sept 2-4, 1987</td>
<td>European Conference on Speech Technology</td>
<td>Edinburgh, Scotland</td>
<td>Secretariat, European Conference on Speech Technology, CEP Consultants Ltd, 26 Albany Street, Edinburgh EH1 3QH, UK</td>
</tr>
<tr>
<td>Sept 7-10, 1987</td>
<td>1987 International Conference on Digital Signal Processing</td>
<td>Florence, Italy</td>
<td>Prof V Cappellini, Facoltà di Ingegneria, via di S.Marta 3, 50139 Firenze, Italy</td>
</tr>
<tr>
<td>Sept 14-16, 1987</td>
<td>IEEE-EURASIP 5th Workshop on Multidimensional Signal Processing</td>
<td>Leeuwenhorst, Congress Center, Noordwijkerhout, The Netherlands</td>
<td>Mrs Y Smits, Department of Electrical Engineering, Delft University of Technology, P.O.Box 5031, 2600 GA Delft, The Netherlands</td>
</tr>
<tr>
<td>Sept 23-25, 1987</td>
<td>4th International Conference in Image Analysis and Processing</td>
<td>Cefalu, Sicily, Italy</td>
<td>Prof Vito de Gesu, Dipartimento di Matematica e Applicazioni, Università di Palermo, 90123 Palermo, Italy</td>
</tr>
<tr>
<td>Sept 29 - Oct 2, 1987</td>
<td>International Symposium on Data Analysis and Informatics</td>
<td>Versailles, France</td>
<td>INRIA, Service des Relations Extérieures, Bureau des Colloques, Domaine de Voluceau, Bp 105, 78153 Le Chesnay Cedex, France</td>
</tr>
<tr>
<td>Nov 18-20, 1987</td>
<td>AFCET Sixth International Conference on Image Analysis</td>
<td>Antibes, France</td>
<td>AFCET, 156 boulevard Pereire, 75017 Paris, France</td>
</tr>
<tr>
<td>Jan 31 - Feb 5, 1988</td>
<td>SPIE Conference on Medical Imaging</td>
<td>Newport Beach, California, USA</td>
<td>SPIE, P.O.Box 10, Bellingham, WA 98227-0010, USA</td>
</tr>
<tr>
<td>Sept 5-8, 1988</td>
<td>4th European Signal Processing Conference</td>
<td>Grenoble, France</td>
<td>Eusipco-88 Conference Secretariat, Cephag-ENSIEG, BP46, 38402 St Martin d'Heres cedex, France</td>
</tr>
<tr>
<td>October 17-20, 1988</td>
<td>IAPR 9th International Conference on Pattern Recognition</td>
<td>Beijing, China</td>
<td>9ICPR Secretariat, Chinese Association of Automation, P.O.Box 2728, Beijing, China</td>
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