IAPR

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

NEWSLETTER

Contents

From the Editor's Desk

This *Newsletter* sees the announcements of two important new programmes: IAPR Fellowships and IAPR Industrial Affiliates. These are intended to reward people who have put their valuable energies into the Association, and to increase awareness of our activities in industry. This *Newsletter* also includes the IAPR Directory, a complete list of all officers, committees, and points of contact for all member associations.

This is the last issue of the *Newsletter* that I shall edit: I am giving it up in order to concentrate on TC5 activities. Maria Petrou of the University of Surrey, UK, is to continue the good work, aided by the Secretariat. I would like to extend my appreciation to all those people who have made my time as editor so enjoyable. I am sure that all readers will wish Maria every success in the future.

Circulation: 14,900 copies

Message from the President

I AM VERY PROUD TO ANNOUNCE two new programmes in IAPR that have recently been approved by the Governing Board: the establishment of an Industrial Affiliate Programme, and the creation of an IAPR Fellow Programme. The Industrial Affiliate programme will increase our visibility and interaction with the industrial research community. The IAPR Fellow programme will enable us to honour those people who have made outstanding contributions to IAPR and to the field of pattern recognition. Further details about these programmes are given elsewhere in this issue. I want to thank Dr. Masakuzu Ejiri and members of the Industrial Liaison Committee, and Professor Saburo Tsuji and members of the Fellow Committee, for their hard work in formulating these programmes.

I would also like to announce an upcoming change of Newsletter Editor, to begin with the next (January) issue. The Editorship is a challenging and important job in IAPR, and I know that the Executive Committee and the readership at large join me in expressing our appreciation to Dr. Adrian Clark, who has held this difficult position for several years. Dr. Clark has recently taken on the role of Chairman of TC-5, Benchmarking and Software, and we look forward to working with him further in this capacity. We welcome Dr. Maria Petrou of the University of Surrey as our new Newsletter Editor. The Executive Committee has recently approved the provision of staff services to the Newsletter Editor, which will be handled by Mrs. Susan Duff of Membership Services. It is our goal to provide a timely and informative newsletter to strengthen communication among our members.

Yet another change: Prof. Herb Freeman, whose role in forming IAPR and whose long-term, dedicated service to the organization has been unparalleled, has relinquished his position as one of the U.S. members of the Governing Board. I feel that words are quite inadequate to express our gratitude to Prof. Freeman for his work for IAPR over the years. Without him, there quite literally would be no IAPR. We welcome Prof. Tom Huang as the incoming U.S. member on the Governing Board, and look forward to working with him.

While I am distributing welcomes, I also want to include the pattern recognition societies who have recently joined IAPR: Belarus and Ukraine. At this time, we now have 30 countries participating in IAPR, with a total of 43 persons serving on our Governing Board. We are becoming ever more international!

The Awards Committee would like to remind you to submit your nominations for the K. S. Fu Award. This biennial award is given in recognition of outstanding contributions to the field of pattern recognition, and consists of a substantial cash award and an inscribed certificate presented at ICPR. The deadline for the next award is 1$\underline{st}$ March 1994. Please contact committee chairman Prof. Martin Levine (levine@mcrcim.mcgill.ca, Fax 1-514/398-

7348) for more details.

Finally, I hope that everyone is now making plans to attend ICPR '94 in Jerusalem next Fall. The conference will offer four parallel sessions on Computer Vision and Image Processing (Tom Huang, Programme Chair), Pattern Recognition and Neural Networks (N. Tishby, Programme Chair), Signal Processing (D. Malah, Programme Chair), and Parallel Computing (Steve Tanimoto, Programme Chair). The deadline for paper submissions is 1$\underline{st}$ February 1994. I hope you will join us in Jerusalem for a stimulating conference! The meeting in Jerusalem takes on an added international importance in view of the recent accord signed in Washington. Let us all work together to make the conference a successful one!

Jake Aggarwal
IAPR President

IAPR Fellow Programme Established

THE GOVERNING BOARD HAS VOTED to establish an IAPR Fellow Programme to recognize persons who have made outstanding contributions to IAPR and to the field of pattern recognition.

Detailed instructions and nomination forms will be prepared and distributed biannually by the Fellow Committee or the Executive Committee. To initiate a nomination, a nominator must submit an IAPR Fellow Nomination Form (or the equivalent information) to the Chairman of the IAPR Fellow Committee. Anyone can serve as a nominator, including the nominee him/herself. All IAPR participants are eligible to be nominated, with the exception of current members of the Executive Committee and Fellow Committee, who may not be considered during their terms of office.

Nominees will be selected by the Executive Committee, upon recommendation by the Fellow Committee. Nominees will be evaluated on the basis of their contributions to IAPR and participation in IAPR activities. The names of the IAPR Fellows will be announced at ICPR and in the *Newsletter*. Recipients will be presented with a framed certificate issued by the Governing Board.

The Fellow Programme will adhere to the following schedule during the initial year of operation.

1$\underline{st}$ **March 1994** Deadline for submission of nomination form to IAPR Fellow Committee Chairman

15$\underline{th}$ **April 1994** Deadline for submission of recommendation letter of Fellow Committee Chair to IAPR President

15$\underline{th}$ **May 1994** Mail ballot for Fellow Selection is sent to Executive Committee members

15$\underline{th}$ **June 1994** Deadline for casting ballots

9ᵗʰ–13ᵗʰ October 1994 Announcement of IAPR Fellows at ICPR

Thereafter, the schedule may be adjusted by the Executive Committee as needed to provide adequate time to collect and evaluate nominations in order to present the awards at ICPR.

For further information about nomination procedures and forms, please contact Professor Saburo Tsuji, Department of Systems Engineering, Osaka University, Toyonaka, Osaka 560, Japan (Phone +81-6-844-1151 Fax +81-6-857-7664, Email: `tsuji@sys.es.osaka-u.ac.jp`).

Jake Aggarwal
IAPR President

IAPR Industrial Affiliate Programme

TO INCREASE THE INTERRELATIONSHIP between the IAPR and industry, the IAPR Governing Board has voted to establish an "Industrial Affiliate" membership programme. This programme is intended to enhance IAPR's visibility in industry and increase the participation of industrialists in ICPR and other IAPR-sponsored activities, as well as to contribute to IAPR's revenues.

Any company in a member country can become an Industrial Affiliate of the IAPR by applying in writing and paying the administration fee and annual membership fee. Industrial Affiliates will receive a subscription to IAPR's official magazine, *Pattern Recognition Letters*, ten copies of each issue of the *Newsletter*, and periodic mailings of informative materials such as calls for papers. The annual membership fee will be $ 250 US with a one-time administration fee of $ 500 US charged to initiate membership. Industrial Affiliates will be encouraged to join for a two-year term of membership.

Further information about this programme can be obtained from Dr. Masakazu Ejiri, Mechanical Engineering Research Laboratory, Hitachi Ltd, 502 Kandatsu, Tsuchiura, Ibaraki 300, Japan (Telephone: +81 298 32 4111; Fax: +81 298 31 9345; Email:`ejiri@crl.hitachi.co.jp`).

Jake Aggarwal
IAPR President

Report on the Eighth Scandinavian Conference on Image Analysis, May 1993, Tromsø, Norway

IT IS NOT OFTEN the case that you go to a conference and you are taught how to become a millionaire! And yet, that is exactly what happened at the 8ᵗʰ SCIA conference. Professor Gonzalez from the University of Tennessee decided to replace his publicised invited talk on segmentation of range images via data fusion and morphological watersheds, and give us instead a few tips on money making from our profession. I will disseminate here the secret for the benefit of the community: If you have an idea, before you talk about it, file an application for a patent. If your idea is an algorithm, and in particular software, it cannot be patented, but if it is presented as a process, it can!

The rest of the invited speakers taught us more mundane things: Professor Ramstad from the University of Trondheim gave an excellent talk on image compression and guided us to the secrets of the mystical fractal image coding. For an 8-bit 512×512 image, there are $2^{2000000}$ possible configurations. And yet, all the images all humans have ever seen in the history of human race are a mere 2^{66}! This shows how much room for image compression exists. Therefore, the fact that current algorithms can reduce the options down to 2^{200000} should not discourage people from taking up the subject! Professor Sanfeliu from the University of Catalonia reviewed matching methods and set up the scene for Professor Kittler from Surrey University to give a very interesting talk on dictionary-based probabilistic relaxation with explicitly incorporated binary measurements concerning the elements to be matched. Finally, Professor Jain from Michigan State University reviewed object recognition from range images and Professor Jones from Oak Ridge talked on range images and mobile robot navigation.

The most exciting new result presented at the conference, according to my opinion, was the work by Fassnacht and Devijver, presented by Pierre Devijver at the workshop on Contextual Methods in Pattern Recognition organized by Torfinn Taxt the day before the main conference started. The new result concerns the equivalence of Markov Chains and Gibbs' distributions. This result seems to me to have the significance of the Hammersley-Clifford theorem that proved the equivalence of Markov fields and Gibbs' distributions. It is particularly exciting because it essentially proves the equivalence of a causal and an acausal system and for this reason it was treated with almost disbelief even by the presenter himself. Another exciting talk was given by Robert Duin on the superlearning capabilities of neural nets. It seems that neural nets defy the peaking phenomenon in Pattern Recognition mainly due to their poor training capabilities which reduce their effective capacity.

The conference took place in the northern-most University of the northern-most city with the northern-most brewery in the world: Tromsø! There were 230 submissions, out of which 160 papers were accepted for presentation and 40 for posters. About half of the submissions were from outside Scandinavia. 250 participants marvelled at the 24-hour day light, enjoyed the magnificent scenery and endured the near freezing temperatures with the occasional snowfall at the end of May! At the banquet we had the chance to experience

a "joik": a ritualistic welcoming/blessing, performed by a Sami woman and her toddler boy in local costume. I learned subsequently that rituals like this had been banned because they could include cursing. That explained the multiple re-assurances given to us beforehand by the programme chair Richard Blake that whatever the woman was going to do was thoroughly good! It was true! The weather improved the next day!

Maria Petrou
University of Surrey

New Journal for Image Processing and Machine Vision

The IEE (Institution of Electrical Engineers) in the U.K. has re-organised its Proceedings topics and in February 1994 will be launching a new journal title called *Vision, Image and Signal Processing*. The joint Honorary Editors will be:

Professor Peter Grant
Signal Processing Group,
Dept. of Electrical Engineering,
University of Edinburgh,
Edinburgh, Scotland
and
Dr. John Illingworth
Vision, Speech and Signal Processing Group,
Dept. of Electronics and Electrical Eng.,
University of Surrey,
Guildford, UK

This journal encompasses image and signal processing in its widest sense. Image processing techniques, covering sampling, enhancement, restoration, segmentation, texture, motion and shape analysis, are appropriate for the journal. It also covers source coding techniques which are used in image coding; for example vector quantisation, transform and sub-band techniques, motion compensation, standards and 3D-modelling for bit rate reduction in single images or image sequences. Advances in the field of speech analysis, coding, recognition and synthesis are appropriate for the journal. Signal processing includes algorithm advances in single and multi-dimensional recursive and non-recursive digital filters and multirate filterbanks; signal transformation techniques; classical, parametric and higher order spectral analysis; system modelling and adaptive identification techniques.

Papers on novel algorithms for image and signal theory and processing, together with review and tutorial papers on the above topics will be welcomed by the Honorary Editors. Papers having a practical relevance and dealing with application of these concepts are particularly encouraged.

To submit a paper send 5 copies of a manuscript of approximately 12 to 16 double spaced A4 pages (or 3000 words) plus 10 to 14 illustrations to:

The Managing Editor: IEE Proceedings
Institution of Electrical Engineers
Michael Faraday House
Six Hills Way
Stevenage
Herts SG1 2AY
United Kingdom

Longer papers will be considered if they are of exceptional merit. The journal aims to provide a rapid response to authors, with 90% of all manuscripts dealt with in less than six months. Fuller details of the guide to authors can be found in the current IEE Proceedings parts.

John Illingworth
University of Surrey

Optical Character Recognition and Document Image Analysis

THIS SIX-HOUR VIDEO short course by George Nagy of the Rensselaer Polytechnic Institute, Troy, New York, USA, was conceived and produced for the purpose of bringing research personnel, faculty, engineers, and managers up to date in this field. The course features historically significant approaches, fast preprocessing techniques, successful types of features, the failure of common statistical assumptions, methods based on lexicons and grammars, performance comparison of OCR equipment, and an overview of useful software. For more information, contact Focus Interactive Technology at (+1) 518-276-8276 or Fax (+1) 518-276-6380.

John Woods

Book Review

Discriminant Analysis and Statistical Pattern Recognition by Geoffrey J. McLachlan, John Wiley & Sons, Inc., 1992. 526 pages, ISBN 0-471-61531-5.

This book provides an outstanding, fully comprehensive and systematic account of discriminant analysis and statistical pattern recognition. Though the subject of discriminant analysis is treated somewhat from the viewpoint of mathematical statistics, it covers practically all the problems which researchers in statistical pattern recognition have to face. The author pays attention not only to many theoretical problems but also to a great number of practical issues.

One of the priorities of the book is its emphasis on recent key advances in the field, some of which appear to be discussed for the first time in any monograph. Among the topics examined in detail, we can find such important issues, for researchers and practitioners alike, as bootstrap assessment of a sample-based discriminant rule.

The book is divided into 13 chapters. After a general introduction to the field of discriminant analysis and its position in the framework of pattern recognition, the author discusses likelihood-based approaches to discrimination. Special attention is paid to the EM algorithm. The next chapter concerns normal models for the group-conditional (or, in pattern recognition terminology, class-conditional) densities and the discrimination via these normal-based models. The reduction of the dimension of the feature vector through linear projections that optimize certain separability measures for normal models are discussed too.

After considering available results for the distribution of discriminant functions in the case of multi-variate normal class-conditional distributions, the author focuses on some problems that arise with the estimation of normal theory-based models in practical situations. Among very important problems discussed here is that of over-fitting models with too many parameters relative to the sample size of the available training set. The performance of the sample normal-based linear and quadratic rules under departures from normality is discussed too, together with robust estimation of discriminant rules.

Data analytic considerations with normal-based discriminant analysis are the subject of the next chapter. Very important problems facing a practitioner are discussed here, including the detection of apparent outliers in the training set, the question of model fitting and low-dimensional graphical representation of the feature data aimed at revealing the underlying structure of classes. The book continues with parametric discrimination via non-normal models and non-parametric approaches to discrimination.

One chapter is devoted wholly to the problem of assessing error rates of a sample-based discriminant rule when the same data are used for its construction. The problem of selecting suitable features is discussed in a separate chapter both from the theoretical and practical viewpoint.

The final chapter should appeal to all those working in image analysis, since it is devoted to applications and extensions of discriminant analysis motivated by problems in statistical image analysis, in particular in the area of remote sensing, medical diagnostics, computer vision and astronomy.

It should be noted that the book is not a textbook. It is a monograph providing an invaluable discussion of all the results and achievements related to the discussed topics. The book can be used as a source of reference of either a theoretical or practical nature. In order to meet this goal a broad coverage of the results in discriminant analysis and statistical pattern recognition is provided, together with some 1200 references. The reader is assumed to have a fair mathematical or statistical background. However, owing to a comprehensive treatment of many practical issues, it can be recommended both to theoreticians and practitioners in the field of pattern recognition.

Pavel Pudil
University of Surrey

ECAI '94: Eleventh European Conference on Artificial Intelligence

8–12 August 1994
Amsterdam RAI, International Exhibition and Congress Centre, The Netherlands

Organized by the European Coordinating Committee for Artificial Intelligence (ECCAI) and hosted by the Dutch Association for Artificial Intelligence (NVKI)

The European Conference on Artificial Intelligence (ECAI) is the biennial European forum for scientific exchange and presentation of AI research. The aim of the conference is to cover all aspects of AI research and to bring together basic research and applied research. The Technical Programme will include paper presentations, invited talks, panels, workshops, and tutorials. The conference is designed to cover all subfields of AI, including non-symbolic methods.

Exhibition An industrial and academic exhibition will be organized from 9th – 11th August 1994. Detailed information will be provided in the second call for papers or can be obtained at the conference office (for the address see elsewhere).

Sponsors (preliminary list)

- Bolesian B.V.
- Municipality of Amsterdam
- University of Amsterdam
- Vrije Universiteit Amsterdam
- University of Limburg

Call for Papers You are invited to submit an original research paper that represents a significant contribution to any aspect of AI, including the principles underlying cognition, perception, and action in humans and machines; the design, application, and evaluation of AI algorithms and intelligent systems; and the analysis of tasks and domains in which intelligent systems perform. Theoretical and experimental results

are equally welcome. Papers describing innovative ideas are especially sought, providing such papers include substantial analysis of the ideas, the technology needed to realize them, and their potential impact.

Of special interest this year are papers which address applied AI. Two kinds of papers are sought. The first category is case studies of AI applications that address significant real-world problems and which are used outside the AI community itself; these papers must justify the use of the AI technique, explain how the AI technology contributed to the solution and was integrated with other components, and most importantly explain *why* the application was successful (or perhaps why it failed) – these "lessons learned" will be the most important review criteria. The second category is for papers on novel AI techniques and principles that may enable more ambitious real-world applications. All the usual AI topics are appropriate. These papers must describe the importance of the approach from an applications context, in sufficient technical detail and clarity, and clearly and thoroughly differentiate the work from previous efforts. There will be special prizes for the best papers in both these areas.

Submission of papers   Authors are requested to submit to the Programme Chairperson 5 copies of papers written in English in hardcopy format (electronic and fax submissions will not be accepted).

Each submitted paper must conform to the following specifications. Papers should be no longer than 5,500 words including references. (Each full page of figures counts as 1100 words.) Papers longer than this limit risk being rejected without refereeing. A separate title page should include the title, the name(s) of the author(s), complete address(es), email, fax and telephone numbers, the specification of between one and four Content Areas and an abstract (maximum 200 words). The title page should also contain a declaration that the paper is unpublished, original work, substantially different from papers currently under review and will not be submitted elsewhere before the notification date other than to workshops and similar specialized presentations with a very limited audience. Papers should be printed on A4 or 8.5"x11" sized paper in letter quality print, with 12 point type (10 chars/inch on a typewriter), single spaced. Double sided printing is preferred. Authors who wish to check that their submission will fit into the final CRC format will be able to obtain detailed instructions including a LaTeX style file and example postscript pages after October 15 by anonymous FTP from `agora.leeds.ac.uk`, directory ECAI94, or by e-mailing `ecai94-style@scs.leeds.ac.uk` with a message body of "help".

For information regarding the submission of papers, please contact:

Dr. Tony Cohn
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Timetable   Papers must be received by the Programme Chairperson no later than 8th January 1994. Acceptance letters will be posted no later than 12th March 1994. Final camera-ready papers must be received by 19th April 1994.

Workshops   A full workshop programme is planned for ECAI '94. These will take place in the two days immediately before the main technical conference, *i.e.* on 8th and 9th August 1994. Workshops may last for either 1 or 2 days. They will give participants the opportunity to discuss specific technical topics in a small, informal environment, which encourages interaction and exchange of ideas. Workshops may address any topic covered by the list of areas given above (*i.e.,* in the general call for papers). Workshops on applications and related issues are especially welcome. Workshop proposals should be in the form of a draft call for participation containing a brief description of the workshop and the technical issues to be addressed, the proposed format and the kind of contributions solicited, and the names and addresses (postal, phone, fax, e-mail) of the organizing committee of the workshop. Additionally, proposals should specify the number of expected participants and some names of some potential participants. Proposers are encouraged to send their draft proposal to potential participants for comments before submission.

The organizers of accepted workshops are responsible for producing a call for participation, for reviewing requests to participate and for scheduling the workshop activities within the constraints set by the conference organizers.

Workshop proposals should be sent to the Workshop Chairpersons as soon as possible, but not later than 1st November 1993. Electronic submission (plain ASCII text) is highly preferred, but hard copy submission is also accepted in which case 5 copies should be submitted. Proposals should not exceed 2 sides of A4 (*i.e.,* approximately 120 lines of text). The proposals will be reviewed by the Programme Committee and the organizers will be notified no later than 31st December 1993.

Details of all accepted workshops will be available by anonymous FTP from `cs.vu.nl`, directory ECAI94 by 31st January 1994. It should be noted that registration for the main conference will be required in order to attend an ECAI '94 workshop.

Workshop Chairpersons are:

Prof. Jan Treur and Dr. Frances Brazier
   Vrije Universiteit Amsterdam
   Department of Computer Science
   De Boelelaan 1081 a
   1081 HV Amsterdam, The Netherlands
   Tel: +31 20 5485588
   Fax: +31 20 6427705
   Email: ecai94-workshops@cs.vu.nl
The Conference Office is:

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   Marcel van Marrewijk, Project Manager
   Mirjam de Leeuw, Conference Manager
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   P.O. Box 1738
   3000 DR Rotterdam
   The Netherlands
   Tel: +31 10 4082302
   Fax: 31 10 4530784
   Email: M.M.deLeeuw@apv.oos.eur.nl

BMVC 94: Fifth British Machine Vision Conference

13–16 September 1994
University of York, UK.

The British Machine Vision Conference is the main UK conference for machine vision and related topics. High quality contributed papers are sought describing recent and novel research in the areas of computer vision, image analysis and processing or pattern recognition. Papers describing research being undertaken through national or international collaborative projects are particularly welcome. The conference is a single-track meeting with both oral and poster presentations. In addition to the contributed papers, there will be several invited talks together with a pre-conference tutorial programme.

A printed copy of the Proceedings will be available to delegates at the conference, and a selection of the best papers will be published separately in a special issue of *Image and Vision Computing*.

Contributions are sought on any novel aspect relating to machine vision and pattern analysis, including:

- image processing and feature extraction
- practical applications
- object recognition and scene analysis
- model based coding
- reconstruction of 3D shape
- architectures
- advanced pattern analysis

- active vision
- computational issues in perception
- motion analysis
- robotic vision and sensor fusion
- neural networks

Four copies of full papers not exceeding 10 pages (approx. 5000 words if no figures) should be submitted for review. Papers will be accepted either for oral presentation or for presentation as posters. All papers accepted will appear in the Proceedings. Papers will be reviewed by the BMVA Committee.

Deadlines and format

Deadline for Paper Submission	25th April 1994
Notification of Acceptance	10th June 1994
Deadline for Camera-Ready Copy	8th July 1994

Papers should be submitted to the Conference Chairman:

Dr Edwin Hancock
   Department of Computer Science
   University of York
   York, Y01 5DD
   UK
   Tel: +44 904 43 3374
   Fax: +44 904 43 2767
   Email: erh@minster.york.ac.uk

IAPR Directory

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TC13	Dr F Murtagh	
	Pattern Recognition in Astronomy & Astrophysics	

Contact Addresses for IAPR Associations

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Belarus: Belarusian Association for Image Analysis & Recognition (75 Members)

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Belgium: Pattern Recognition Contact Group of the SOGESCI (45 Members)

> **Mr L Verhellen**
> c/o SOGESCI-BVWB
> Renaissancelaan 30
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> PO Box 373
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Canada: Canadian Image Processing and Pattern Recognition Society (220 Members)

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China: Pattern Recognition & Machine Intelligence Committee of the Chinese Association of Automation (100 Members)

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> People's Republic of China

Czech Republic: Czechoslovak Pattern Recognition Society (50 Members)

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Denmark: Danish Pattern Recognition Society (60 Members)

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> Fax: +45 98 154008

Finland: Pattern Recognition Society of Finland (205 Members)

> **Mr J Kangas**
> Laboratory of Computer & Information Science
> Helsinki University of Technology
> SF-02150 Espoo
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France: Pattern Recognition and Artificial Intelligence Group of AFCET (200 Members)

> **Members)**
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Forthcoming Conferences, Workshops and Events

The information given in the following table is maintained in a database by the IAPR Secretariat. Please notify the Secretariat of any additions to the list. (The address of the Secretariat is given at the foot of this page.)

DATE	EVENT	LOCATION	CONTACT ADDRESS [SPONSOR]
8–10 Dec 1993	Second Conference on Digital Imaging Computing: Techniques and Applications (DICTA'93)	Sydney, Australia	DICTA'93, Tony Adriaansen, CSIRO — Division of Wool Technology, PO Box 7, Ryde NSW 2112, Australia (dicta93@ee.uts.edu.au) [APRS]
28–31 Dec 1993	Third International Conference on Advances in Pattern Recognition and Digital Techniques	Calcutta, India	Convenor Organising Committee, Electronics and Communication Sciences Unit, Indian Statistical Institute, 203 B. T. Road, Calcutta – 700 035, India
11–14 Jan 1994	9th Conference on Pattern Recognition and Artificial Intelligence	Paris, France	AFCET-RFIA, 156 Boulevard Péreire, F-75017 Paris, France
14–16 April 1994	International Symposium on Speech, Image Processing and Neural Networks	Convention and Exhibition Centre, Hong Kong	Dr. Chorkin Chan, Department of Computer Science, University of Hong Kong, Pokfulam Road, Hong Kong (cchan@csd.hku.hk)
16–20 May 1994	Vision Interface '94	Banff, Alberta, Canada	Colin Archibald, Autonomous Systems Laboratory, National Research Council, Ottawa, Ontario, Canada K1A 0R6 (archibald@iit.nrc.ca) or Paul Kwok, Dept. of Computer Science, The University of Calgary, Calgary, Alberta, Canada T2N 1N4 (kwok@cpsc.ucalgary.ca)
30 May–2 June 1994	Second International Workshop on Visual Form	Capri, Italy	IWVF2 Scientific Secretariat, Istituto di Cibernetica, CNR, Via Toiano 6, 80072 Arco Felice, Naples, Italy
1–3 June 1994	Pattern Recognition in Practice IV	Vlieland, The Netherlands	Prof. Edzard S. Gelsema, Erasmus University, Department of Medical Informatics, P.O. Box 1738, 3000 DR Rotterdam, The Netherlands (gelsema@mi.fgg.eur.nl)
10–12 July 1994	Second International Workshop on Digital Mammography	Royal York Hotel, York, UK	SIWDM Conference Secretariat, Applied Vision Research Unit, University of Derby, Mickleover, Derby, DE3 5GX, UK (avru@uk.ac.derby)
8–12 August 1994	ECAI '94: 11th European Conference on Artificial Intelligence	Amsterdam RAI, the Netherlands	Dr. Cohn, Division of Artificial Intelligence, School of Computer Studies, University of Leeds, Leeds LS2 9JT, UK (ecai94@scs.leeds.ac.uk)
29 Aug–1 Sept 1994	Fourth International Conference on Visual Search	Koningshof, Eindhoven, The Netherlands	ICVS4 Conference Secretariat, Applied Vision Research Unit, University of Derby, Mickleover, Derby, DE3 5GX, UK (avru@uk.ac.derby)
13–16 September 1994	BMVC 94: 5th British Machine Vision Conference	University of York, UK.	Edwin Hancock, Department of Computer Science, University of York, York, Y01 5DD, UK (erh@york.minster.ac.uk) [BMVA]
9–13 Oct 1994	12th ICPR International Conference on Pattern Recognition	Jerusalem, Israel	12th ICPR, c/o International Ltd, 10 Rothschild blvd, 65121 Tel Aviv, Israel (icpr@math.tau.ac.il) [IAPR]