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

NEWSLETTER

Editor

Dr Maria Petrou
Department of Electronic and Electrical Engineering
University of Surrey
Guildford GU2 5XH
United Kingdom
Tel: +44 483 259801
Fax: +44 483 34139
Email: m.petrou@ee.surrey.ac.uk

Volume 16

Number 2

April 1994

Contents

JULY COPY DEADLINE
20 MAY 1994

CHANGES IN IAPR BYLAWS

Individual memberships of IAPR have now been abolished. Anyone interested in receiving a current edition of the Constitution and Bylaws should contact their own Governing Board representative or the IAPR Secretariat at the address on page 11.

FROM THE EDITOR'S DESK

Dear Everybody

This is a note of apologies. I have to apologise to those who got the January issue, to those who did not get it and to those who will get it! To an awful lot of people I come to think!

All of you who *did* receive the January issue, please accept my apologies for the less-than-perfect printing. We now have a new printer from this issue onwards and hopefully this problem will go away. (The copy you are now holding either proves or disproves this hope, but at the time of writing I do not know; I can only hope!).

All of you who *did not* get the January issue, please accept my apologies too. Lots of copies got lost in the post because of poor packaging; we have a new mailing agent now and the fact that you are reading this means, that they did their job properly!

All of you who received the January and April issues *together,* I apologise for that as well. When large consignments were identified as missing, we tried to have extra copies printed but this took time and they

had to be despatched with the April issue. (I say "we", but actually Susan Duff should take the credit for chasing around, organising printers, mailing agents etc; without her effort we wouldn't be in the position to hope that the problem is solved).

Now, with apologies out of the way, what about the cartoon competition? With the delays and mixing up, I thought it might be better to extend the deadline to be the same as the copy deadline for the July issue, (20 May); this way everybody will have the opportunity to participate. Don't forget: the first prize is US$50.

Finally, I would like to thank all those who sent messages and notes with constructive comments and expressed support and appreciation for the January issue. I hope you will find this issue equally interesting and informative.

Maria Petrou

LETTERS TO THE EDITOR

Dear Editor
After the 11-ICPR, I have often heard that the time has come to consider CD-ROM as the primary medium for conference proceedings; those who attended that conference in The Hague know why! Several kilos are heavy to be carried home, especially with weight limits on international flights. In any case, I believe the old fashioned proceedings are worth preserving. If I had to decide whether to receive a standard or CD-ROM version, I would have no doubts; I prefer the former.

I will explain why. Usually when I am attending a conference, I like to have a look at the papers to be presented the following day so that I can select sessions to attend that are of particular interest to me. I could not do this if the paper version was not available. I have often seen several other people carrying their volumes around with them; I think they would not be carrying such a weight if they did not think it was profitable to have the proceedings with them during presentations. Reading CD-ROM proceedings in a conference room does not seem to be practical. Besides - I am not the lucky owner of a CD-ROM drive!

Dr Gabriella Sanniti di Baja,
Naples, Italy

ICAPRDT '93
Inaugural Address given by the President of IAPR
Professor Jake Aggarwal

IAPR co-sponsored the 3rd International Conference on Advances in Pattern Recognition and Digital Techniques (ICAPRDT '93), held at the Indian Statistical Institute in Calcutta, 28-31 December 1993. The conference coincided with the Birth Centennary Celebration of P. C. Mahalanobis, founder of the Indian Statistical Institute. Professor Mahalanobis is renowned for his contributions in statistics and the application of statistical techniques to a wide range of fields of inquiry; he is perhaps best known to us for the Mahalanobis distance used in statistics and pattern recognition. In India, he is highly esteemed for the many social contributions he brought about, and the Indian Post Office has recently issued a commemorative stamp in his honour.

In his inaugural address to the conference, Professor Aggarwal reviewed the contributions of Professor Mahalanobis and also took the opportunity to review the history of IAPR and describe its current programs.

IAPR had its inception in February 1972 in the first meeting of the organizing committee for the First International Joint Conference on Pattern Recognition in Washington, D.C. The conference committee went through a number of reorganizations and in 1974 a constitution was drafted and, after much discussion, was accepted at IJCPR 3 (1976), and a Bylaws Committee was appointed. The creation of the association was finally completed at the first meeting of its Board of Governors in 1978 at the 4th ICPR. Last year the 11th biennial ICPR was held in The Hague, and this fall 12th ICPR will be held in Jerusalem. Finally, Professor Aggarwal referred to two recently established programs, the Fellow Programme and the Industrial Affiliates Programme and encourageed participation in both of them.

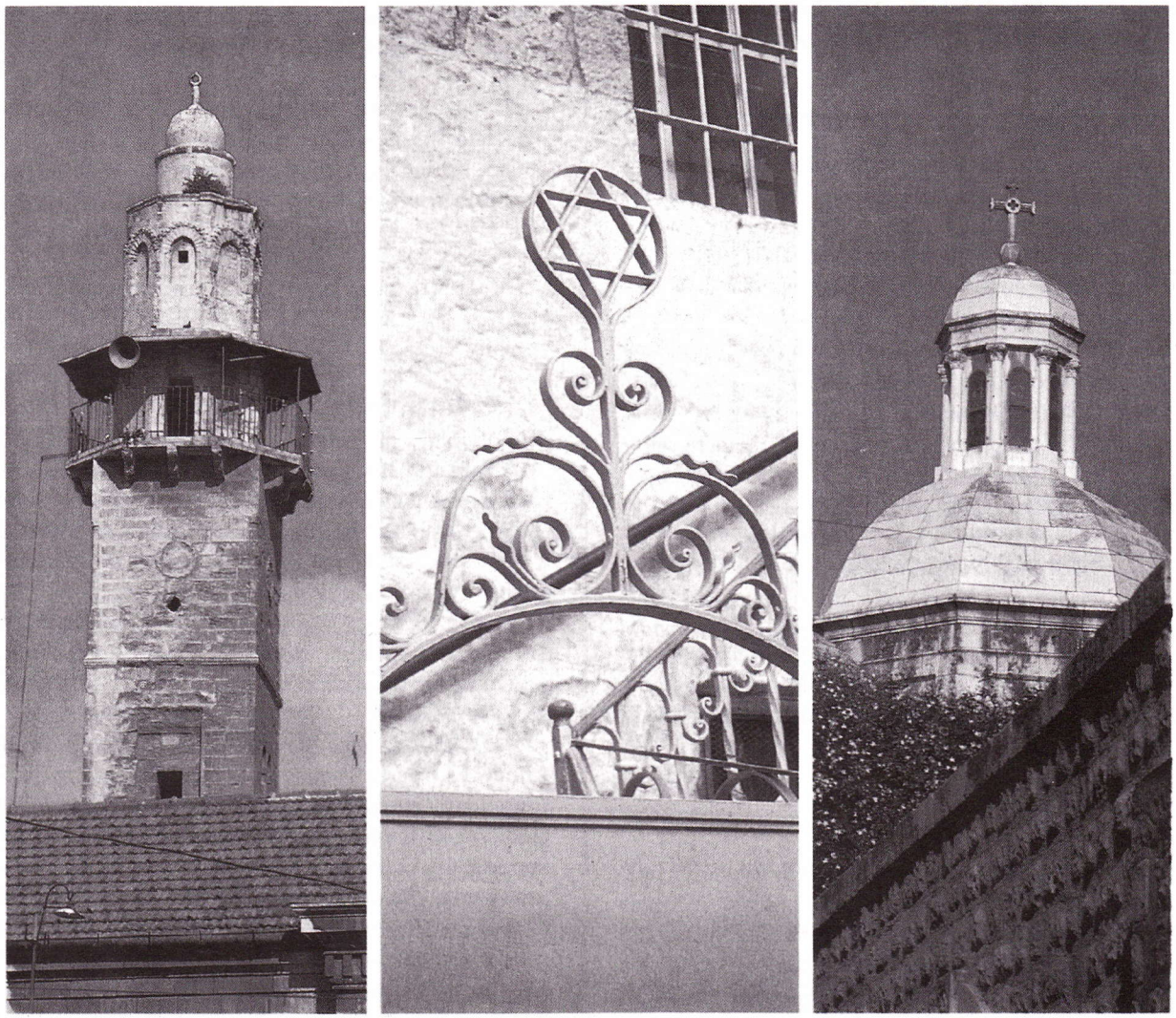
NEWS OF MEMBERS

Welcome to the 31st Member of IAPR
TAIWAN

The Governing Board has voted to accept as a new member The Image Processing and Pattern Recognition Society of Taiwan, Republic of China, with some 450 members. Their contact address is:

c/o Professor Jhing-Fa Wang
Institute of Information Engineering
National Cheng Kung University
1 Ta-Hsueh Road
Tainan, Taiwan, R.O.C.
Fax: +886 6 274 7076

12-ICPR - OCTOBER 1994



JERUSALEM - HOLY CITY OF THREE FAITHS

Existing for nearly 6,000 years, Jerusalem is one of the oldest continually inhabited cities in the world. It has been ruled by Canaanites, Jews, Babylonians, Persians, Greeks, Egyptians, Syrians, Romans, Christians, and Muslims. In recent centuries is was ruled by Turkey and Britain, split between Jordan and Israel, and is now the capital of Israel. The city is holy for Christians, Jews, and Muslims, and is abundant with holy places for these three religions: the Church of the Holy Sepulcher, the site of the Crucifixion and the tomb of Jesus; the Western Wall, a remnant of Herod's Temple; the Dome of the Rock, built over the rock from which Mohammed ascended to heaven.

Jerusalem will fascinate the visitor not only by it numerous historical sites, but also by the kaleidoscope of its people who have come from the four corners of the earth. Mingling with people wearing the spectrum of modern fashions are dark-suited ultra-orthodox Jews, Arab women in brightly embroidered shifts and Christian clergy in sombre robes.

But Jerusalem is not only a city for archeologists. Modern Jerusalem is a metropolitan city with a population of half a million, spread over more than 100 square kilometers of hills and valleys. It has parks, contemporary malls, outlying industrial zones, and ever-expanding suburbs. It is also the location of the Israeli government and The Hebrew University of Jerusalem, the oldest university in Israel. Situated 700 meters above sea level, and 70 Km west of the Mediterranean, Jerusalem has hot, dry summers, and chilly, rainy winters. The best times to visit are September through November and April through June, with mostly sunny days and temperatures in the mid-20's centigrade.

Material collected by Shmuel Peleg

HOW TO GET IAPR SPONSORSHIP

Conferences and Meetings Committee Chairman
Walter Kropatsch

In order to promote better worldwide communication, IAPR sponsors Conferences and Meetings in the field of Pattern Recognition. Sponsorship entitles organizers to use the IAPR name and logo on all official announcements and documents and IAPR promotes the meetings in its Newsletter. The procedure that is followed is set up to allow an efficient and fast decision by IAPR. Please provide the necessary information promptly to enable quick reactions of the IAPR Conferences & Meetings Committee!

There are two types of IAPR sponsorship:

A. Sponsorship only (no financial involvement)
B. Sponsorship with a loan of funds

A. Sponsorship only

Requests should be submitted to the Chairman of the Committee; Technical Committees should submit requests through the TC General Chairman. All requests should contain the following information:

1. *Subject and title of meeting*
2. *Date and location*
3. *Tentative programme*
4. *Clarification whether the Proceedings will be published before or after the meeting*
5. *Names of the scientific committee members*

The Chairman will determine if the meeting is in compliance with IAPR standards and the Constitution and Bylaws, and will obtain approval from the organizer's local Governing Board member. (To speed up the process you may send copies of the request and additional material to your local Governing Board member and to the IAPR Secretary!). If sponsorship is approved, the Chairman will inform the Secretary and the organizers and the meeting will be announced in the Newsletter.

B. Sponsorship with a loan of funds

A loan can be given to cover some initial expenses which must be returned after the meeting. For sponsorship with a loan, meeting organizers must submit the following additional information with their sponsorship requests:

6. *List of steering committee members*
7. *Budget showing tentative income from registration/ other sponsors and estimated expenditure with the repayment of the loan shown as an expenditure item.*

After the Chairman has approved sponsorship, the IAPR Treasurer will evaluate the loan request in light of the available funds and may consult with other members of the Executive Committee to determine if such a loan can be made. Following the meeting, organisers must promptly return the borrowed funds to the Treasurer with a financial report of actual income and expenditure.

After the meeting, all organisers should submit a short report to the newsletter and send information of how to obtain Proceedings to the Secretariat, address page 11. For further information or clarification, please contact:

Professor Walter Kropatsch:
krw@prip.tuwien.ac.at

7th ICIAP '93
Bari Italy September 20-22 1993

The 7th International Conference on Image Analysis and Processing (ICIAP), mainly sponsored and organised by the Italian Chapter of IAPR, was a successful one. It coincided with the 25th anniversary of the Italian Research Activity of Image Analysis and Processing (IRAIAP). Thus the purpose of the conference was twofold:

- *to promote research in image analysis and processing worldwide*
- *to celebrate the 25th Anniversary of IRAIAP in Italy.*

About 100 participants from 26 countries, including 20 from Italy, attended and presented more than 90 papers, including 5 invited ones. They covered essentially all important and interesting aspects of image analysis and processing, the current development and future directions of this exciting field as well as its applications, including pattern recognition.

At the conference, the chairman, Professor Sebastiano Impedovo of Università di Bari, presented silver medals to the people who have shown outstanding achievements in this field; these included (in alphabetic order) Professors Dickmanns of Germany, Freeman and Rosenfeld of the USA, Simon of France and Yeshurun of Israel and 9 others who contributed significantly to the conference.

The programme also included a field trip to the TECNOPOLIS where participants were supposed to get some insight into the Italian industries in image analysis and processing and applications to machine vision and knowledge-based enterprises; instead, however, only video tapes were shown during this visit. The overall impressions of most participants in the 7th ICIAP were positive. Many believe, however, that it would be better if the conference could arrange some demonstrations of speakers' research results in this ever growing and widely applicable field; the TECNOPOLIS visit could have shown some hands-on, on-line, real time demonstrations instead of video tapes.

Patrick S P Wang, Boston, USA

REPORTS ON IAPR CONFERENCES HELD IN 1993

ICDAR '93

International Conference on Document Analysis and Recognition

(Extracts from the report sent to IAPR by Professor Yasuaki Nakano, Conference Co-Chair).

The International Conference on Document Analysis and Recognition was held on 20-22 October 1993 at Tsukuba, Japan. There were 416 attendees from 22 countries; about 40% of these were from outside Japan so a truly international forum was constructed.

The quality of presented papers was very good and the discussion was exciting. Not only the oral sessions, but also the poster sessions were very crowded by audience and if we hadn't announced the start of the banquet, the discussion might have continued until the evening.

In the demonstration session, where 23 teams demonstrated their achievement using IBM-PC, Sun workstations or their own machines, participants showed the real performance of their algorithms and gave many suggestions for both presenters and audience.

Beside the technical sessions, the social events were also fruitful. The technical tour to laboratories in Tsukuba area attracted more than 100 participants. The "Gagaku" or ancient Court Music and Dance played at the banquet by the musicians and a dancer belonging to the House of Imperial Court of Japan was beautiful and majestic. It is very regrettable that some presenters were unable to attend due to lack of funds, the delays in getting visas and the strike at Charles de Gaulle airport, Paris.

At the plenary session on 20 October, the **Outstanding Young Researcher Award** was presented. It had been decided to make this award to one or two young researchers under the age of 35 and to consist of 300,000 yen (approx US$1000). On this occasion it was shared between Professor Seon Whan Lee from Chungbuk University, Korea, Dr Thomas A Bayer from Daimler-Benz, Germany and Dr Shinichi Satoh from NACSIS, Japan.

The next ICDAR will be held in Montreal, Canada, 14-16 August 1995 and in 1997 in Ulm, Germany.

ICAPRDT '93

3rd International Conference on Advances in PR & Digital Techiques

The 3rd International Conference ICAPRDT'93 was held in India at the Indian Statistical Institute (28-31 December 1993), chaired by Professor Asoke Kumar Datta, and sponsored by the International Association of Pattern Recognition and the Indian Unit for Pattern Recognition & Artificial Intelligence.

ICAPRDT'93 assumed a particular significance because its date coincided with the birth centenary of P C Mahalanobis, a great thinker and scientist of India who is the founder of the Indian Statistical Institute and is considered to be the father of statistics in India. The scientific attendance as well as the organization of the conference honoured this event. The inaugural address, given by Professor Aggarwal, is reported on page 2 of this newsletter.

General topics in computer vision, pattern recognition, and signal processing were presented in dedicated sessions, as well as applications to speech, natural language processing, computer music, atmospheric and tropospheric wave propagation. Special emphasis was given to pitch and computer music.

The technical program included 20 invited lectures and 83 contributions, most of which were of good technical quality. I would like to mention the original contribution given by Kumar and Desai (ISI of Bombay) concerning an integrated stereo vision system, and the invited talk of Trivedi (State University, New York).

The attendance was high, with 140 people from eleven countries (Australia, Canada, France, Germany, Greece, India, Israel, Italy, Japan, UK and USA).

I would like to end this report with a great appreciation for the efforts of the organizers for creating a fascinating and relaxed atmosphere inside the ISI, which encouraged discussion and human interaction. The social programme was well tuned with the level of the conference; it consisted of Indian music and ballet, and we enjoyed a delightful gala dinner.

Vito Di Gesú, Palermo, Italy

5th International Conference on Computer Analysis of Images & Patterns
Budapest Hungary 13-15 September 1993

Extracts from a Report by the Programme Committee Chairman
Dmitry Cheterikov

This year we had the fifth CAIP conference in a biennial series. For the first time CAIP was held outside Germany. To make the conference a meeting point for Eastern and Western colleagues, all authors from Russia, Ukraine, and Belarus were exempted from the conference fee and provided with free accommodation; other East European participants were supported by a significant reduction of the conference fee. Thus, over 30% of the accepted CAIP'93 papers came from Central and Eastern Europe giving a unique overview of the research activities in this region. We are indebted to the sponsors, IAPR, the EC Commission, the ACCORD-PHARE Programme and the Hungarian Academy of Sciences; without their generous support, CAIP '93 could never have achieved its main goals.

The conference was held in two parallel sessions. As it is extremely difficult, if not impossible, to give a comprehensive survey of a relatively large conference like CAIP'93, I will only mention a few highlights that stimulated a lot of discussion. Haralick, motivated by the well-known lack of theoretical and experimental background for comparison and evaluation of image analysis algorithms, advocated a 'vision engineering' approach to the problem. The idea is to establish an experimental protocol that enables one to investigate the performance of an algorithm (or chain of algorithms) under a variety of random degradations of the input data such as noise, geometrical distortions, occlusions, etc. The degradations are viewed as random perturbations to be propagated through each algorithm stage in order to evaluate a criterion function describing the difference between the ground truth and the actual imperfect output. The talk resulted in a stimulating discussion. In most of the remarks, doubts were expressed concerning the possibility of treating the degradations as random variables and the theoretical tractability of the propagation. Sklansky (Univ. of California) and Huang (Univ. of Illinois) emphasised the importance of addressing the performance evaluation problem, but were quite pessimistic about the proposed scheme. Huang joined those who, as Haralick said, called him a dreamer. In our opinion, a more feasible solution would be to establish standards in image analysis, sharing software and creating rich public domain image databases for thorough testing of the algorithms. This would support the 'vision engineering' efforts; steps are being taken in this direction as well.

Gimel'farb (Ukrainian Academy of Sciences) gave a comprehensive invited talk devoted to generative image models based on Markov random fields with Gibbs probability distributions and Bayesian decisions. The talk reflected the author's experience gained over 20 years of work on the topic as well as his professional enthusiasm, preserved despite all the troubles. Gimel'farb overviewed the elaborated theoretical background and gave examples of two applications to classic problems of low-level mono and stereo vision, the segmentation of piecewise-homogenous texture images (texture mosaics) and the reconstruction of a 3D surface from a stereo pair. The participants were also given a chance to see a 'real-time' PC demo of the implemented programs during the three poster sessions of the conference.

The results, especially those of the texture segmentation and 'synthesis-by-analysis', were impressive and proved that the introduced Gibbs models did capture a lot of reality. However, more experimental work with real-world textures is needed to evaluate the performance and the limits of the approach. A large texture image database and, perhaps, more computing power will be necessary. Hopefully, contacts established during the conference will lead to an international co-operation facilitating further developments.

In the Neural Networks session, the invited talk by Roska (MTA SZTAKI, Budapest), received most attention and was followed by an active discussion. The speaker dwelled upon the computer vision applications of the increasingly popular cellular neural networks (CNN). The CNN paradigm has been recently realised in a chip that provides the computing power of about one thousand billion operations per second. The laboratory of Professor Roska has successfully applied the CNN to such basic vision tasks as shape and motion detection, colour processing, and depth perception. It was shown that many of the vision operators implemented in the CNN were physiologically motivated which allowed the authors to call the chip a 'bionic eye'. The CNN has an analog window/kernel function (template) whose size is in practice limited to 3 by 3 or 4 by 4. This may limit its image processing power and flexibility (e.g. with respect to orientation). Nevertheless, the results already achieved are impressive and will hopefully stimulate the progress of computer vision.

CAIP'95 will be held in Prague, Czech Republic, in September, 1995, under the responsibility of Dr.Vaclav Hlavac of the Czech Technical University.

CAIP '93 Proceedings, edited by D Chetverikov & W Kropatsch, published by Springer Verlag as Vol 719 of the Lecture Notes in the Computer Science Series. (approx 850 pages).

BOOK REVIEWS

Artificial Intelligence and Molecular Biology

Edited by Lawrence Hunter

Published and distributed by AAAI Press / The MIT Press, 1993. 588 pages, ISBN 0-262-58115-9.

This book has been initiated by the 1990 Spring Symposium on Artificial Intelligence and Molecular Biology, sponsored by the American Association for Artificial Intelligence. Although its 12 chapters, introduction and afterword have been written by different authors, the book presents a unified view of new developments in the field of artificial intelligence and molecular biology. This fact is a result of excellent editing work by Lawrence Hunter who also wrote the first chapter introducing the fundamentals of modern molecular biology for computer scientists.

A reader is getting acquainted with the technical terms of biology, its vocabulary and especially with basic concepts. The author discusses what is life and living parts like tissues and cells, life as a biochemical process, the concept of evolution in reality and in programming; what is genetic information, genetic code and also DNA. The area of computational biology is examined also with respect to creating databases of genetic sequences and other biological data. These databases begin to represent an increasingly valuable source of information not only for the biological community but also for computer scientists in search of domain information. A list of the most interesting databases is included, together with the information about the computer-based bulletin board system called 'bionet'.

The chapter on computational linguistics of biological sequences has been written by D B Searls who has contributed substantially to AI aspects of computational linguistics, genetic information and syntactic pattern recognition. He claims that since DNA is a richly expressive language for specifying the structures and processes of life, it is pertinent to apply to biological sequences the extensive results and methods developed in the field of formal language theory. A compact but reasonably complete introduction to the major results of formal language theory is provided for those with no background in mathematical linguistics.

The following chapter is devoted to neural networks and adaptive optimization, that is to the topic which is in the focus of interest of all those working in the field of AI or pattern recognition. It describes research into neural network algorithms for the prediction of RNA secondary structure from knowledge of the primary structure. Some background on both the computer science and molecular biology aspects of the problem is provided. The chapter discusses also various search algorithms which can be utilized as well in other fields like pattern recognition, particularly in feature selection. Among those discussed we can find 'greedy algorithms', Monte Carlo methods and 'simulated annealing'.

The use of artificial neural networks for predicting protein structural features is decribed in the next chapter. Basic background material about artificial neural networks like feedforward networks, training procedures and network optimization is also provided. The text successfully demonstrates the power of the artificial neural network in extracting information from the protein structure database and extrapolating to make predictions of protein structural features from the genetic sequence alone.

The following chapter attempts to find a good representation for protein substructure, especially emphasizing the importance of representation in problem solving which has long been emphasized in AI.

Further chapters of the book discuss an example of how AI techniques, integrated with existing molecular biology sequence analysis methods, enhance their performance. It is shown how AI ideas of complex representations, pattern recognition, search and machine learning have been applied to the task of inferring and recognizing structural patterns associated with molecular function. An approach to integrating AI techniques with existing domain methods for sequence analysis is described. Three systems, ARIADNE for matching a complex pattern to annotated protein sequence, ARIEL for construction of these complex patterns by refining 'seed' patterns and finally PIMA, which constructs seed patterns given a family of proteins, are discussed in detail. Furthermore, theoretical concerns about existing approaches to automated discovery systems are outlined and a new kind of problem for machine learning research is proposed. Though the remaining chapters are devoted to perhaps more biologically orientated topics like qualitative biochemistry,

identification of metabolic pathways and AI approaches to the intepretation of the NMR spectra of proteins, they may serve also specialists from other fields. The concluding chapter concerning molecular scene analysis, namely crystal structure determination through imagery should be particularly interesting for those engaged in image processing.

To conclude, it is a well known fact that computer scientists and biologists often have different attitudes to collaboration, education and other aspects of research. In order to work with biologists, all researchers engaged in AI, pattern recognition and computer vision must understand a good deal about their domain and find ways to bridge the gap between these rather different scientific cultures. There is no doubt that the reviewed book can serve very well to this goal.

Pavel Pudil
University of Cambridge, UK

□□□□□

Pattern Recognition Transforms

by P S Moharir

Research Studies Press, ISBN 086 380 137 4

Mr Hat and Tit for Tat

No, this is not a review of the latest video game but a mnemonic: Mixed Radix Half Addition Translation and Translation Invariant Transforms for Trustworthy Applications in Taxonomy. The use of abbreviations is one of the first things you will notice when you start reading; there are three pages of abbreviations in the beginning and sometimes you have to decode sentences: "To completely define the MRHAC the MRNS on which MRHA and MRHS are based must be specified" (p. 69).

What about the contents of the book?

In short it describes generalizations of the Discrete Fourier Transform (DFT). To give a short example of the nature of these generalizations, consider 12 sample points X(0), ... , X(11) from a speech signal. If you want to recognize the same signal even if it starts earlier or later you have to consider the shifted signal X(0+d), ... , X(11+d). If the signals under consideration always have the length 12 then it is necessary to define the addition +d so that the new indices always fall into the range 0 to 11. Usually this is done by cyclic addition, i.e. addition modulo 12 in our example. For d = 3, X(5) goes to X(8) and X(10) to X(1). The standard solution to the recognition problem is then to compute the magnitude of the DFT.

Now consider the binary half-addition: Here you first write the index n and the shift parameter d as binary numbers. Then you add these two numbers bit by bit and forget the carry. If n=5 and d=3 then you add 0101 and 0011 to get 0110 = 6 and X(5) goes to X(6). The next generalization is to replace the binary counters in each position with different counters. For the counters (2,2,3) we get: 5 = 3 + 2 = (012), 3 = (010) and as result (012)+(010) = (022) = (002) = 2 and therefore X(5) goes to X(2). This is a typical example of a Multi-Radix-Half-Addition-Translation or a Mr. Hat.

For each such translation scheme there is a corresponding DFT-like algorithm. This is described in Chapter 2 of the book. In Chapter 3 the 'Fast' implementations (corresponding to the FFT implementation of the DFT) are investigated. These transformations achieve translation invariance by first applying a linear transform and then computing the magnitude of the result. Following the style of the book we could call these transforms 'half-linear'. This half-linear structure is given up in Chapter 4 in which fully non-linear algorithms (i.e. algorithms in which even the basic operations, the butterflies, are non-linear) are described. Having derived a whole class of translation invariant transforms the problem is to select the best one for a given task. This selection is, of course, problem dependent but some strategies (like energy preservation, quantization properties etc.) are discussed in Chapter 5.

What is the book good for?

There are some suggestions at the end but the answer is really left to the reader. In the introduction the reader is warned: "Each reader will find the book incomplete in different ways." I found it especially incomplete in the following respects:

- The theory of group representations, which provide a natural framework for at least one half of the book is never mentioned.
- Many concepts are introduced with the help of examples and you often wonder: how did the author choose the examples?
- The references are (with one exception) from before 1987, which leaves the question: Hasn't anything happened since then?

Another quotation from the introduction summarized very well my interaction with the book: "Incompleteness offers a wide choice of future directions to pursue and hence liberates. Therefore I offer no apology". At least for me this was true and I hope a few other readers will find their way into this interesting field.

Reiner Lenz
Linköping, Sweden

CONFERENCE ANNOUNCEMENTS

(If not given here, contact addresses for meetings appear on pages 10-11)

MVA '94

IAPR Workshop on Machine Vision Applications
Kawasaki Japan
13-15 December 1994
Main Topic - Machine Vision and its Applications

Machine Vision Algorithms
Feature extraction, Range data / 3D shapes, Motion / Image sequence analysis, Neural network applications, Color image analysis, AI-based vision, Human interface, and related technologies.

Special Purpose Architectures
Intelligent sensors, VLSI image processor chips, Massively parallel processing, Architectures for 3D and/or motion processing, Image processing systems, Software environment for image processing, and related technologies.

Industrial Applications
Factory automation, Disaster prevention and rescue, Security control, Navigation, Mobile robots, Civil and construction engineering, Agriculture/Forestry/Fishery, Other applications, and related technologies.

Document, Map and Line Drawing Processing
Document image processing, Drawing recognition, Multimedia database, Map and engineering drawing database, Map processing and map-based systems, 3D reconstruction from maps or drawings, and related technologies.

Submit four copies of a 500-1000 word extended abstract with at least one main figure to:

Prof. Mikio Takagi, Institute of Industrial Science, University of Tokyo, 7-22-1 Roppongi, Minato-ku, Tokyo 106, Japan.
Phone: +81-3-3479-0289 Fax: +81-3-3402-6226
Email: takagi@tkl.iis.u-tokyo.ac.jp

The abstract should contain the following in its first page:
1. Title of the paper
2. Author name(s) and his/her(their) affiliation(s)
3. A person's name and address to be contacted, with phone, fax and email if available
4. Answers to the following questions:
   What is the original contribution of this work?
   Why should this contribution be considered important

Extended abstract: **15 June 1994**
Acceptance Notification: **1 Aug 1994.**
Final camera ready papers: **1 Oct 1994.**

SSPR '94

International Workshop on
Syntactic & Structural Pattern Recognition
Nahariya Israel [IAPR]
4-6 October 1994

- General methodology
- Machine learning and grammatical inference
- Structured document image analysis
- Speech and one-dimensional signal analysis
- Structural methods in image processing
- Shape analysis
- Structural methods in computer vision

Final abstract submission: **1 July 1994**
Camera ready paper: **at the Workshop**

2nd IEEE Workshop on Applications of Computer Vision

Sarasota Florida 5-7 December 1994

Four copies of papers should be submitted to:
Bruce Flinchbaugh, Texas Instruments, MS238,
13510 N Central Expressway, Dallas, Texas 75243, USA

Papers should be limited to 30 double-spaced pages, including figures; font should be no smaller than 12pt. The title page should include names and addresses of authors and an abstract of up to 200 words; please also include a second title page with the abstract omitting names and addresses. Also include a summary of no more than one page containing answers to the following questions:

1. What is the application area of the work reported in this paper?
2. What is paper about?
3. What is significance/original contribution of work?
4. How does this work relate to previously published work and how can it be applied or used by others?

Paper deadline: **1 June 1994**
Final camera ready paper: **1 Sept 1994**

ISMM International Conference

Distributed Multimedia Systems & Applications
15-17 August 1994 Honolulu, Hawaii

Three copies of extended abstract of 1500 words to:
Dr B Furht, Dept Computer Science & Eng., Florida Atlantic University, Boca Raton, Florida 33431, USA.
Email: borko@cse.fau.edu
Extended abstract: **1 May 1994**
Final camera ready paper: **15 July 1994**

FORTHCOMING CONFERENCES, WORKSHOPS AND EVENTS

1994	Event	Location	Contact [Sponsor]
2-6 May ECCV'94	3rd European Conference on Computer Vision	Stockholm, Sweden	Professor Jan-Olof Eklundh, KTH, NADA, S-100 44 Stockholm, Sweden. eecv94@bion.kth.se
16-20 May VI'94	Vision Interface '94	Banff, Alberta, Canada	Colin Archibald, VI'94 Program Co-Chairman, National Research Council, Ottawa, Ontario, Canada K1A OR6. archibald@iit.nrc.ca
16-20 May GKPO '94	3rd Int. Conf. on Computer Graphics & Image Processing	Spala, Poland	Dr Urszula Rutkowska, Institute of Computer Science, Ordona 21, 01-237 Warsaw, Poland. wmokrzyc@plearn.bitnet
30 May-2 June IWVF2	2nd Int,Workshop on Visual Form	Capri, Italy	Dr Carlo Arcelli, Istituto di Cibernetica, CNR, Via Toiano 6, 80072 Arco Felice, Naples, Italy. imag@arco.na.cnr.it [IAPR]
1-3 June PRP IV	Pattern Recognition in Practice IV	Vlieland, Netherlands	Conference Secretariat, Dept. of Medical Informatics, Erasmus University, PO Box 1738, 3000 DR Rotterdam, The Netherlands. gelsema@mi.fgg.eur.nl [IAPR]
20-23 June CVPR'94	IEEE Conference on Computer Vision & Pattern Recognition	Seattle, Washington, USA	Steve Tanimoto, CVPR'94, Department of Computer Science & Engineering (FR-35), University of Washington, Seattle, Washington 98195,USA. tanimoto@cs.washington.edu
21-24 June SPIE EUROPTO	Symposium on Optics Productivity in Manufacturing	Frankfurt, Germany	D Braggins, Machine Vision Systems Consultancy, Royston, United Kingdom.
27 June-1 July IEEE-ISIT	International Symposium of Information Theory	Trondheim, Norway	James L Massey, ISI ETZ F 89, ETH-Zentrum, CH-8092, Zurich, Switzerland. INFORT@CZHETH5A.BITNET
27 June-1 July CGI '94	CG International '94	Melbourne, Australia	REMIT Advanced Computer Graphics Centre, Royal Melbourne Inst of Technology, GPO Box 2476V Melbourne, Victoria 3001 Australia. cgi94@godzilla.cg1.rmit.oz.au
10-12 July SIWDM	Second International Workshop on Digital Mammography	York, U.K.	SIWDM Conference Secretariat, Applied Vision Research Unit, University of Derby, Mickleover, Derby DE3 5GX, U.K. avru@derby.ac.uk
11-13 July ICSIST	Int.Conf.on Statistics in Industry, Science and Technology	Tokyo, Japan	Professor C Hirotsu, Department of Mathematical Engineering and Information Physics, University of Tokyo, 7-3-1 Hongo, Bunkyo-ku, Tokyo 113, JAPAN.
8-12 Aug ECAI '94	11th European Conference on Artificial Intelligence	Amsterdam, Netherlands	Dr Tony Cohn, Division of Artificial Intelligence, School of Computer Studies, University of Leeds, Leeds LS2 9JT, United Kingdom. ecai94@scs.leeds.ac.uk
15-17 Aug ISSM	Int.Conf. Distributed Multimedia Systems and Applications	Honolulu, Hawaii	Dr B Furht, Department of Computer Science & Eng., Florida Atlantic University, Boca Raton, Florida 33431, USA. borko@cse.fau.edu
28 Aug-2 Sept IFIP Congress	13th World Computer Congress	Hamburg, Germany	IFIP '94 Conference Secretariat, PO Box 30 24 80, D-20308 Hamburg, Germany. Fax: +49 40 35 6923 43
29 Aug-1 Sept ICVS4	Fourth International Conference on Visual Search	Eindhoven, Netherlands	ICVS4 Conference Secretariat, Applied Vision Research Unit, University of Derby, Mickleover, Derby DE3 5GX, U.K. avru@derby.ac.uk
9-13 Sept Dalton 94	The John Dalton Conference	Manchester, U.K.	Dalton '94, UMIST, Manchester, M60 1QD, U.K. dalton@umist.ac.uk
13-16 Sept EUSIPCO-94	VII European Signal Processing Conference	Edinburgh, Scotland, U.K.	Professor C F N Cowan, EUSIPCO-94 Secretariat, Dept of Electronic & Electrical Eng., University of Technology, Loughborough LE11 3TU, U.K. Fax: +44 509 222 830
13-16 Sept BMVC 94	Fifth British Machine Vision Conference	York, U.K.	Dr E Hancock, Department of Computer Science, University of York, York, YO1 5DD, U.K. erh@minster.york.ac.uk

Please inform the Secretariat of any revisions or additions to this information
66 Weston Park Thames Ditton Surrey KT7 0HL UK Email: 100042.511@compuserve.com

21-23 Sept ICGI94	2nd Int. Colloquium on Grammatical Inference	Alicante, Spain	Dr J Oncina, Dept Tecnologia Informatica y Computacion, Universidad de Alicante, E-03080 Alicante, Spain. Fax: +34 6 590 3464 [IAPR]
1-23 Sept 16 DAGM	Recognition and Learning	Vienna, Austria	Professor W G Kropatsch, Technical University of Vienna, Institute for Automation, Treitlstrasse 3/1832, A-1040 Wien, Austria. dagm@prip.tuwien.ac.at
21-24 Sept AIMSA '94	6th International Conference on Artificial Intelligence	Sofia, Bulgaria	Philippe Jorrand, AIMSA '94 Program Chair, Institut IMAG-LIFIA, 46 avenue F,lix Viallet, 38000 Grenoble, France. philippe.jorrand@imag.fr
25-28 Sept VCIP '94	Visual Communications & Image Processing '94	Chicago, USA	VCIP '94, SPIE, PO Box 10, Bellingham, WA 98227, USA. rosa@mom.spie.org
26-30 Sept ISSRS	The International Symposium on Satellite and Remote Sensing	Rome, Italy	Satellite Remote Sensing, EUROPTO, c/o Direct Communications GmbH, Xantener strasse 22, D-10707 Berlin, Germany. (Conf. Chair, J Desachy: desachy@irit.fr)
3-7 Oct MP'94	2nd International Workshop on Massive Parallelism	Capri, Italy	A Mazzarella, C di Napoli, Istituto di Cibernetica, Via Toiano 6, I-80072 Arco Felice, Napoli ITALY. secyann@cib.na.cnr.it
4-6 Oct SSPR'94	International Workshop on Syntactic and Structural Pattern Recognition	Nahariya, Israel	Ms Nilly Schnap, Faculty of Industrial Engineering and Management Technion , Israel Institute of Technology, Technion City, Haifa 32000 Israel. SSPR94@ie.technion.ac.il [IAPR]
9-13 Oct 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]
18-20 Oct DAS94	Document Analysis Systems	Kaiser-slautern Germany	Andraes Dengel, German Center for Artificial Intelligence (DFKI), PO Box 2080, 6750 Kaiserslautern, Germany. DAS94@dfki.uni-kl.de [IAPR]
8-11 Nov ICARCV'94	Third Int. Conf. on Automation, Robotics and Computer Vision	Singapore	Assoc.Professor N Sundararajan, ICARCV'94 Conference Secretariat, Institution of Engineers, Singapore, 70 Bukit Tinggi Road, Singapore 1128, Republic of Singapore. ensundara@ntuvax.ntu.ac.sg
13-16 Nov ICIP-94	First IEEE International Conference on Image Processing	Austin, Texas, USA	Conference Management Services, 3024 Thousand Oaks Drive, Austin, Texas 78746, USA. icip@pine.ece.utexas.edu
14-17 Nov SPICIS '94	Second Singapore International Conference on Intelligent Systems	Singapore	Dr Looi Chee Kit, SPICIS '94, c/o Japan-Singapore AI Centre, 75 Science Park Drive , 01-01-04, Cintech II, Singapore 0511. cheekit@iti.gov.sg
20-25 Nov ISITA '94	International Symposium on Information Theory & Its Applications 1994	Sydney, Australia	The Convention Manager, ISITA '94, AE Conventions Pty Limited, PO Box E181, Queen Victoria Terrace, ACT 2600 AUSTRALIA. Fax: +61 6 273 2012
5-7 Dec 2nd IEEE ACV	Workshop on Applications of Computer Vision	Florida, USA	Bruce Flinchbaugh, Texas Instruments MS 238, 13510 N Central Expressway, Dallas, Texas 75243, USA.
13-15 Dec MVA'94	IAPR Workshop on Machine Vision Applications	Kawasaki, Japan	Professor M Takagi, Institute of Industrial Sciences, University of Tokyo, 7-22-1 Roppongi, Minato-ku, Tokyo 106 Japan. takagi@tkl.iis.u-tokyo.ac.jp [IAPR]
1995	**1995**	**1995**	**1995**
6-9 June SCIA95	9th Scandinavian Conference on Image Analysis	Uppsala, Sweden	9SCIA, Centre for Image Analysis, L„gerhyddsv„gen 17, S-752 37 Uppsala, Sweden. scia9@cb.uu.se [IAPR]
9-11 Aug GRec95	IAPR Workshop on Graphics Recognition	Pennsylvana USA	Professor R Kasturi, Dept Computer Science & Engineering, Penn State University, University Park, Pennsylvania 16802, USA. kasturi@cse.psu.edu [IAPR]

YEAR AT A GLANCE CONFERENCE PLANNER

Contact details on pages 10-11 Previous Reports - volume and number shown in brackets

● = submission deadline ■ = final manuscript deadline dates = Meeting Dates

						1994					1995		
Conference	**Location**	**April**	**May**	**June**	**July**	**Aug**	**Sept**	**Oct**	**Nov**	**Dec**	**Jan**	**Feb**	**March**
ECCV'94	Stockholm		2-6										
VI'94 (v15 n3)	Alberta		16-20										
GKPO '94	Poland		16-20										
IWVF2 (v15 n3)	Capri		30 -	2									
PRP IV (v15 n3)	Vlieland		■ 1	1-3									
CVPR'94	Seattle			20-23									
SPIE EUROPTO	Frankfurt		■ 23	21-24									
IEEE-ISIT	Trondheim			27 -	1								
CGI '94	Melbourne			27 -	1								
SIWDM (v16 n1)	York	■ 29			10-12								
ICSIST	Tokyo		■ 15		11-13								
ECAI '94 (v15 n4)	Amsterdam	■ 19				8-12							
ISSM (v16 n2)	Hawaii		● 1		■ 15	15-17							
IFIP Congress '94	Hamburg	■ 22				28 -	2						
ICVS4 (v16 n1)	Eindhoven				■ 8	29 -	1						
Dalton 94	Manchester						9-13						
EUSIPCO-94	Edinburgh	■ 30					13-16						
BMVC 94 (v15 n4)	York	● 25			■ 8		13-16						
ICGI 94 (v16 n1)	Alicante	● 15				■ 16	21-23						
16 DAGM	Vienna			■ 25			21-23						
AIMSA '94	Sofia						21-24						
VCIP '94	Chicago			■ 20			25-28						
ISSRS	Rome					■ 30	26-30						
MP'94	Capri		■ 31					3-7					
SSPR '94 (v16 n2)	Nahariya				■ 1			4-6					
12th ICPR (v16 n1)	Jerusalem			■ 30				9-13					
DAS94	Kaiserslautern							18-20					
ICARCV'94	Singapore	● 30			■ 31				8-11				
ICIP-94 (v16 n1)	Austin				■ 15				13-16				
SPICIS '94 (v16 n1)	Singapore	● 1				■ 1			14-17				
ISITA '94	Sydney		● 15				■ 15		20-25				
2nd IEEE ACV (v16 n2)	Florida			● 1			■ 1			5-7			
MVA'94 (v16 n2)	Kawasaki			● 15				■ 1		13-15			
SCIA95	Uppsala							● 24			*6-9*	*June*	*1995*
GRec95	Pennsylvania									● 15	*9-11*	*August*	*1995*