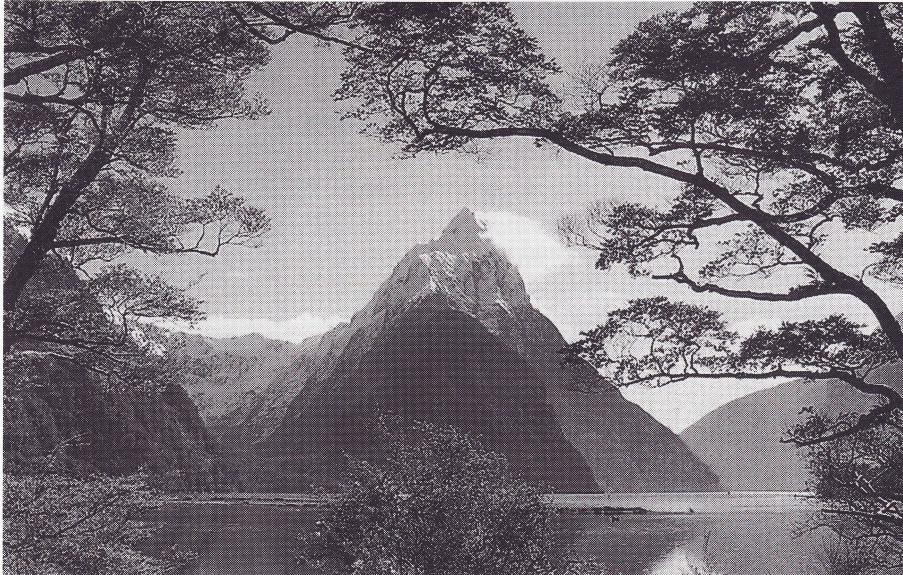




Spring 1999
Volume 21 No 2

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



NEW ZEALAND JOINS IAPR

Milford Sound
within a day's drive of
Christchurch
Venue of IVCNZ'99 Conference

A newly formed New Zealand national group in Image and Vision Computing has been granted membership of the IAPR. IVCNZ was formed following discussions at the New Zealand Image and Vision Computing conference held in Auckland in November last year. Before the formal establishment of IVCNZ, we organised annual conferences and workshops on a rotating basis with various groups making the arrangements, but there was no official representative body. By setting up IVCNZ our aim is to promote the art and science of image processing and computer vision within New Zealand and to encourage international linkages.

At present we have deliberately limited formal membership to institutions and groups to help the establishment of IVCNZ. There is a reasonably small IVC community in New Zealand, so this approach effectively captures the majority of those working in the field. The operations of the IVCNZ group are controlled by a steering committee currently made up of former conference chairmen (see inserts) who, not surprisingly, are also some of the key players in the field within New Zealand.

Our origins: The origins of our new group date back to 1986, when several image processing researchers in New Zealand organised a national Image Processing Workshop to provide a forum where the growing number of practitioners could exchange ideas. This first event was well attended and was followed up by six more successful workshops, which also attracted international participants, particularly from neighbouring Australia. In 1993, the event was reborn as the First New Zealand Conference on Image and Vision Computing (IVCNZ 93), in response to the growth and diversification of image processing activities in New Zealand and the desire for a more international flavour. Seventy papers were presented at the conference, with 25 coming from Australia. Since then, IVCNZ conferences have been held every year including a joint IVCNZ /DICTA conference held in Auckland in 1997. DICTA (Digital Image Computing - Techniques and Applications) is the biennial Australian conference organised by the Australian Pattern Recognition Society (also a member of IAPR). About 100 papers and posters were published in the conference proceedings.

Our members' interests: In New Zealand we have a reasonably small but very active community working in image and vision computing. The major research groups exist within universities and Crown Research Institutes. The latter are government-owned research companies which work in specific sectors and undertake both government and industry funded research and development.

Our members' interests cover a diverse range of activities and applications including: 3D image scanning, analysis and understanding; intelligent active vision and image sequence analysis; videometrics and camera calibration; neural network based image processing; image recovery; laser imaging techniques; synthetic aperture sonar and ultrasonic imaging; image filtering and segmentation; modelling image formation in remote sensing and automated analysis of remotely sensed imagery; development of interferometric synthetic aperture radar (InSAR) techniques.

While there is a considerable amount of what might be termed "mainstream" image processing and vision research undertaken in New Zealand, there are also some interesting and novel applications being addressed reflecting New Zealand's primary industries based on agriculture, horticulture and forestry. Applications include: laser-based inspection of sheep pelts, imaging of standing trees, 2D and 3D scanning and analysis of animal carcasses and meat cuts, sea wave analysis and sand bar movement, fruit grading, visual and X-ray inspection of food products, log and timber scanning, automated crop spraying, forest inventory and management using remote sensing.

Successful 1998 conference: Our national conference last year was held at the University of Auckland and attracted 72 submissions, with a significant number (37) coming from outside New Zealand. It was attended by 82 participants from 12 countries, with the international diversity of the participants being regarded as one of the successes of the conference.

The programme was made up of two plenary sessions, six oral paper sessions and one poster session. The two plenary speakers were Luk Florack (Utrecht), on "Duality principles in image processing and analysis", and Steven Beauchemin (Pennsylvania), on "Recent advances in motion understanding". To help with discussion of the posters, each author was given the opportunity to provide a very brief three-minute oral description of their work. This provided an entertaining alternative to the normal presentation format and certainly focussed the speakers on getting their message across in a succinct manner! As part of the social programme there was a bus excursion to Auckland's scenic west coast, with stops at a local vineyard, beach and native forest. For more information about the conference visit the website www.tcs.auckland.ac.nz/~ivcnz98.

1999 conference underway: Our 1999 conference is being held in Christchurch in August this year and a warm invitation is extended to all IAPR members. It promises to be an enjoyable and stimulating forum at a venue conveniently located for visiting many of New Zealand's finest scenic and tourist destinations. For more information about IVCNZ '99, visit the conference website at www.elec.canterbury.ac.nz/~ivcnz99/index.html. An official home page of the IVCNZ group is currently under construction.

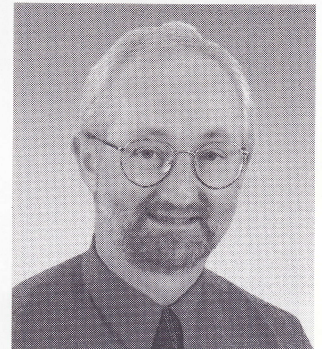
Chris Bowman

Professor Reinhard Klette



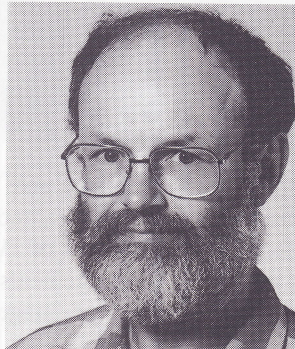
was appointed Professor of Information Technology, Department of Computer Science, CITR at Tamaki Campus University of Auckland, (citr.auckland.ac.nz/). in 1996. Previously, he was the Professor of Computer Vision at Berlin Technical University.

Dr Chris Bowman



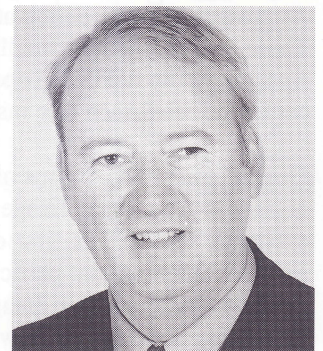
leads the Imaging and Sensing Group at *Industrial Research* (www.vision.irl.cri.nz) He also heads Industrial Vision Solutions, a machine vision systems integration and sales business and is on the editorial board of the IAPR Journal *Machine Vision & Applications*.

Dr Philip Bones



is Senior Lecturer, Department of Electrical Engineering, University of Canterbury, (www.elec.canterbury.ac.nz/). Research interests include medical imaging, problems in image recovery and application of signal processing techniques to physiological signals.

Professor R.M. (Bob) Hodgson



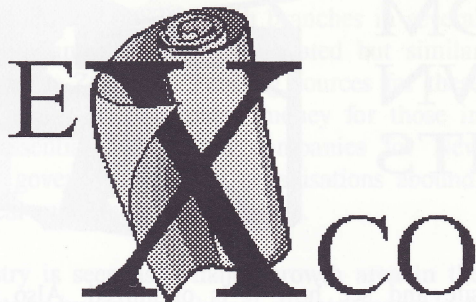
has been active in image processing research and development for over 30 years and was a pioneer of microcomputer based systems. His varied work has included image processing systems, image analysis, remote sensing, and many others

Dr David Pairman



leads the group working in image analysis and remote sensing research at Landcare Research - Manaaki Whenua (a Crown Research Institute) in Christchurch.

From the



NEW MEMBER FOR IAPR

It is a great pleasure to announce that on February 1, 1999, New Zealand joined the IAPR as its 33rd national member. The New Zealand group on Image and Vision Computing (IVCNZ) presented its membership application and the ballot on this application was issued to the Governing Board in December 1998 with a voting deadline of January 31, 1999. The participation of the Governing Board in this ballot was very large (93%) and the vote was unanimously in favour. The New Zealand national member group has approximately 60 individual members. The GB representative for New Zealand is Reinhard Klette. His complete address can be found on the IAPR website: <http://peipa.essex.ac.uk/iapr/>

A NEW AWARD

A new award has been created in honour of the memory of the former IAPR President Pierre Devijver, who passed away in December 1996. After discussions in the ExCo and with the chairman and other members of the Technical Committee TC1 (Statistical Pattern Recognition Techniques), it was decided to link the award to this Technical Committee, since Pierre had been predominantly active in the area of Statistical Pattern Recognition. TC1 has a well established custom of organising a workshop biennially in conjunction with the ICPR. At this workshop it has been customary to invite a distinguished speaker. The lecture given by the invited speaker will be called the "Pierre Devijver Lecture" and the invited speaker will receive the "Pierre Devijver Award". A symbolic cash sum will be associated with the award. The selection of the lecturer, the responsibility of TC1, will be regarded as a great honour.

Once the terms for the award have been established, appropriate guidelines will be formulated. The institution of the Award was announced by Pavel Pudil, chairman of TC1 at the "Pierre Devijver Symposium", held in Brussels on February 12; (report page 7).

PIERO ZAMPERONI

In August 1998, a distinguished member of IAPR, Piero Zamperoni, passed away. He was a very active member of the Education Committee since its institution. To honour his memory, the "Best Student Paper Award", which is assigned during each ICPR has been renamed the "Piero Zamperoni Award". The institution of this award will be officially announced during the 10th International Conference on Image Analysis and Processing (ICIAP99) in Venice, September 27-29, 1999. Guidelines for the selection of the recipient, which is the responsibility of the Education Committee, will be reformulated accordingly

IAPR WEBSITE

We encourage readers of the Newsletter to regularly consult the IAPR website. We do no longer distribute the IAPR Directory as part of the Newsletter, but rather on the website. Changes in the Directory are thus immediately available. The website is regularly updated. We are striving toward a situation where each IAPR Standing Committee and Technical Committee will have its own page linked to the IAPR main page. We would like to stimulate all committees to create their own page. We also newly solicit all national societies who do not yet have their own website to create one and to link it to the IAPR site. This is the easiest way to allow individual members to better know each other, as well as to promote IAPR and to attract new potential members. In particular, we do encourage national associations to provide a list of their members. Although ideally this would be a list of complete addresses, this does not always seem to be compatible with national rules of privacy. In such cases, a list of names and affiliations is a good compromise

CONSTITUTION & BYLAWS

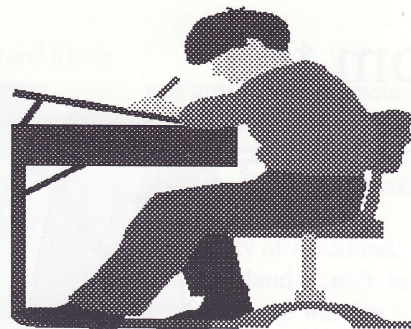
At the Governing Board meeting in Brisbane, it was decided that all member societies should provide an English translation of their Constitution and Bylaws. In fact, since a few years all potential new member societies are requested to do so when applying for membership. In the near future, all member societies whose Constitution and Bylaws are not yet available at the IAPR secretariat will be requested to provide the English translation

*Edzard S. Gelsema
Gabriella Sanniti di Baja*

EDZARD GELSEMA

At the time of going to press, we are very sorry to hear that our President, Professor Edzard Gelsema, is unwell. We know that all IAPR members would wish to join the ExCo in wishing Edzard a speedy recovery and return to good health.

FROM OUR OWN CORRESPONDENTS



WESTERN EUROPE

Vito Di Gesù

In October 1998, Michael Duff proposed that I should act as a Western European correspondent. In particular, he asked me to cover these member countries: Austria, Belgium, France, Germany, Italy, The Netherlands, Portugal, Spain, Switzerland, and the U.K. Several questions arose in my mind: how should I collect useful information? by telephone, by electronic mail, or by travelling around Europe as a professional reporter? I was tempted to decline the job. Too much work to do!

After this emotional phase, I decided to accept it, having in mind the possibility of a mailbox accessible to our scientific community. The purpose is twofold: to allow the fast circulation of information among IAPR members and to make easier the selection of "interesting" news. For this purpose, my collaborator Dr. Biagio Lenzitti and I have organized a web page to implement this idea. We decided to include the following four items:

- local conferences and workshops
- descriptions of institution activities
- new methods & algorithms & open questions
- proposals for joint research

The first two items are quite standard, while the last two have been included to follow a common tradition of scientists. In fact, scientists are used to frequently exchanging letters to communicate preliminary results of their research work and to propose scientific cooperation. This kind of fast debate is very productive and interesting. Computer networks and Netscape communication will improve the dissemination of scientific results in a wider context, encouraging the dialectics inside our community.

In this framework, I would like to encourage all western members of the IAPR to use the web pages to communicate and discuss with each other. The web-pages address is <http://hpdma2.math.unipa.it/iapr>. We tried to make them self-explanatory so that you should not meet many problems when using them. Please, do not hesitate to contact me or/and Biagio Lenzitti for any problems or questions.

For each of the previous items, an appropriate form guides the user to submit his/her news. Please, try now to access our

site and see how it is organized. Also please send us suggestions and remarks to make the site more efficient and agreeable. We ask you to be very concise, sending short, fresh news. You may include further links to more extended web pages, where interested people can go through.

In consideration of the geographic area covered by us, only western member countries, listed at the beginning, may introduce news; nevertheless, everybody may have free access to all information. Therefore, an IAPR member, intending to send news, must contact the local coordinator to get the member country username and the country password. This restriction is intended only to limit the information we will manage to that from our area. It is not aimed to exclude other member countries from the discussion.

I would like to thank everybody in advance for their cooperation and to wish them good luck!

AUSTRALASIA - PACIFIC

Anthony Maeder

Pattern Recognition Perspective

Research and development in pattern recognition, image and audio processing and allied fields are undertaken across this region in three different sectors, as elsewhere in the world: education, government and industry. This article will give a brief appraisal of each, with particular emphasis on the Australian situation.

The regional Higher Education sector consists of 40 universities operating in Australia, 10 in New Zealand and a few others, notably in Fiji and Papua-New Guinea. PR is undertaken by the majority of these, within departments such as CS, EE, Maths, Physics and occasionally other technology related disciplines. These universities have much ongoing contact with other tertiary institutions around the world, especially Asia/Europe/USA, leading to many collaborative projects, exchanges/visits and some student mobility. Indonesia has a number of universities also but is more strongly affiliated with the SE Asian region. There are other tertiary institutions with a stronger vocational orientation (TAFEs, ITs, Polytechs), some of which have PR activity of a more applied nature.

Government sector organisations with a major research charter include Commonwealth Scientific and Industrial Research Organisation (CSIRO) and Defence Science and Technology Organisation (DSTO) with branches in several cities in Australia, and several disaggregated but similar organisations in New Zealand. Funding sources for these vary, with a majority of government money for those in Australia and essentially privatised companies for New Zealand. Other government funded organisations abound, e.g. in bio-medical and remote sensing areas.

High-tech industry is seen as a major growth area in the region, stimulated by geographical remoteness which inspires innovative solutions and an element of go-it-alone. Communications networks are growing fast and infrastructure growth in new technologies such as mobile, satellite/LEO and optical signalling are being supported strongly by government. Many small specialist companies have emerged, ranging from specialist comms software and hardware development to application product developments. Recent successes have included GPS-INS products, bionic devices, and telecomms-based services. Many larger PR and IT companies have strong overseas ownership components, eg in the aerospace/avionics arena both Hawker (Melbourne) and Boeing (Brisbane) have large facilities to service commercial and defence sectors, while in computing DEC (Brisbane), IBM (Sydney) and Motorola (Sydney) have R&D facilities. Other companies which rely on PR R&D from the education and government sectors are most active in Sydney, Melbourne, Brisbane, Canberra, Perth and Adelaide.

Funding of research in the region is largely through various government competitive funding schemes, such as the Australian Research Council (ARC) and National Health and Medical Research Council (NHMRC) in Australia, as well as dedicated discipline or industry-specific schemes and numerous philanthropic trusts. Increasingly, direct industry research or consultancy projects are being encouraged, and state funding is decreasing rapidly in anticipation of this becoming a major avenue in the future.

Considerable effort has been invested in setting up schemes to facilitate research/teaching/industry collaboration, through special grants which require partnerships and shared funding arrangements, and provide a multiplier on base funding or tax incentives. Several schemes exist for supporting national research centre status from government funds, such as Cooperative Research Centres or Key Centres. Most universities have internal Centre support policies which allow growth of new groups. As well over half the universities nationally have come into being in the last 25-30 years, and consequently have a broad interest in technology, there are easily more than 30 research centres of various types with major involvement in PR in Australia, and consequently several hundred associated academics and graduate students.

The region offers two major attractions for both academic and industry location: lifestyle (including safe cities, low

cost-of-living, attractive scenery and weather, many cultural and outdoor activities) and infrastructure (people and resources concentrated in large, well-connected cities, good transport and telecomms networks, close to SE Asian suppliers and markets). Low population pressure and high living standards create a productive environment which can easily accommodate influx and interactions with overseas interests. The region is fast becoming an attractive venue for increasingly global activities such as conferences, outsourcing, remote workplaces. Perhaps we stand to benefit more than most places from the changes brought about by internationalisation.

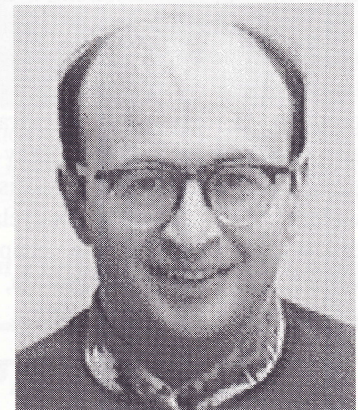
NORDIC

Gunilla Borgefors

Treasurer on the Move!

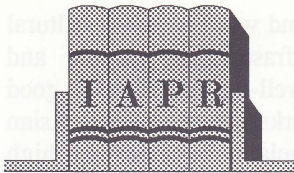
IAPR's previous Treasurer (1994-1998), Josef Bigün, has returned home to Sweden after a long stay in Switzerland. After his MSc. and PhD. at Linköping University in 1983 and 1988 respectively, Josef Bigün went to the Swiss Federal Institute of Technology in Lausanne, starting as a post-doc and finishing as a senior researcher and leader of the Computer Vision group

In 1998 Josef was elected Professor in Signal Analysis, jointly at the young and dynamic Halmstad University and the old respected Chalmers University of Technology in Gothenburg, both on the West coast of Sweden. He arrived in his new position in December 1998



When asked about his plans for the future, Professor Bigün said that he intends to focus his basic research on visual pattern recognition and motion analysis mechanisms, in particular those which use dense orientation fields. As target applications, he would like to continue and further develop his involvement in biometrics research (e.g., multi-modal person authentication) as well content driven image database queries (e.g. shape and texture queries). Naturally, there will also be teaching and all the hard work involved in building a new group in Halmstad. Josef Bigün is the first to occupy this new chair

Although Professor Bigün is no longer Treasurer, he is not lost to IAPR. He is now joint Chair of TC14 Image Processing and a member of the Publications & Publicity Committee. We are happy to have Josef back in "The North" and are sure this will strengthen Image Analysis and Pattern Recognition in the area



BOOK REVIEW

Biometrics Personal Identification in Networked Society

Edited by A Jain, R Bolle & S Pankanti (Kluwer)

I was very impressed with this book on Biometrics, the first of its kind in the literature. The editors and the authors of the individual chapters have performed an excellent job in informing the reader about this set of exciting new applications. Biometrics amounts to a set of techniques that can be employed to recognize automatically an individual using some sort of perceptual input (visual, auditory, olfactory, or biological). With regard to visual and auditory input, the techniques amount to the application of geometric and statistical principles in order to identify patterns that are unique to a particular individual. Practitioners of computer vision and pattern recognition will find the various approaches very sympathetic and many will be impressed by the potential applications that can be achieved using many of the principles developed in their fields over the past thirty years. The introduction by the editors provides an in-depth review of the different biometric technologies (voice, infrared facial and hand vein thermographs, fingerprints, face, iris, ear, gait, keystroke dynamics, DNA, odour, retinal scan and hand/finger geometries). They also discuss a number of research issues encompassing many biometric technologies. These have to do with the well known problems of representations extracted from perceptual input and matching techniques. Many of the individual chapters stand out for being very concise, by describing both the underlying theories and issues related to implementation and product development. In chapters such as fingerprint verification, face recognition, hand geometry based verification, iris and retina identification, signature

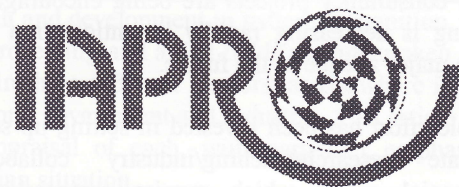
verification, gait recognition and ear biometrics, the reader will find at work many low-level computer vision technologies and solid statistical analysis. Other chapters on DNA based identification, speaker recognition and objective odour measurement introduce technologies that have started to permeate pattern recognition applications. Finally, chapters on large scale systems, technical testing and evaluation and multimodal biometrics touch on important issues in database design - indexing and retrieval, and networking applications.

If you are interested in biometrics, this is, to my knowledge, the first comprehensive text in this area. If you are interested in applications of pattern recognition, you will find many interesting ideas in the book, which is very appropriate for a seminar or a high-level graduate course. Whether or not biometrics will survive as a technical field is a question whose answer depends not only on technical issues but also moral ones and public policy concerns. As is usually the case with capitalist societies, the market will probably provide answers to these questions by further developing promising technologies and discouraging others. The technical barriers for most of the biometrics are not impossible to surmount given enough resources. Whatever the case may be, whether biometrics thrives as an application area or dissipates and is discouraged for whatever reasons, this book will be remembered as an important milestone.

Y. Aloimonos

Computer Vision Laboratory University of Maryland

15 ICPR



**15TH INTERNATIONAL CONFERENCE ON PATTERN RECOGNITION
BARCELONA, SPAIN 3 - 8 SEPTEMBER 2000**

<http://www.cvc.uab.es/icpr2000>

The meeting will be divided into four individual conferences:

**Computer Vision & Image Analysis
Pattern Recognition & Neural Networks
Image, Speech & Signal Processing
Applications, Robotics Systems & Architectures**

Barcelona will warmly welcome you!



IN MEMORIAM PIERRE DEVIJVER PRESIDENT IAPR 1986 - 1988

The Royal Military Academy (RMA) of Brussels (Belgium) organized on February the 12th, 1999 the International Symposium on Pattern Recognition "In Memoriam Pierre Devijver". Pierre Devijver (former IAPR president) graduated in Telecommunications Engineering from the Royal Military Academy. Besides the scientific part of the symposium (four personal and professional friends of Pierre were invited for the oral sessions, Prof. Kittler, Prof. Haton, Prof. Simon and Prof. Backer, and 25 scientific posters were presented), a non-scientific part, a Homage to Pierre Devijver, was included.

The public of this symposium was an uncommon public for a scientific symposium. About 40 percent of the participants were not familiar with pattern recognition, but they came for Pierre Devijver. A lot of former colleagues were present (promotion comrades, former colleagues of Philips and ENST-Brittany). The four speakers had a very difficult task: they had to captivate the specialist as well as the non-specialists of Pattern Recognition. Most of the participants, even the non-specialists, confirmed that they enjoyed the presentations.

During the non-scientific part, Prof. Warrinnier, a promotion comrade, spoke about Pierre as young student of the Royal Military Academy. Pierre's schoolmates met him for the first time, more than 40 years ago, in the same buildings where the symposium was held.

Josef Kittler and Claire Devijver, Pierre's widow



Professor Pavel Pudil, Chairman of the TC1 of IAPR, officially announced the creation of the Pierre Devijver Lecture and the **Pierre Devijver Award**. The Commander of the Royal Military Academy, Major General Georis offered to Pierre's family as conclusion of the non-scientific part, a souvenir of a reduced photo-print of three large non-scientific posters (Pierre, un ami (a friend); Pierre, un collègue (a colleague) and Pierre, un sportif (a sportsman)).

Christiaan Perneel, Vinciane Lacroix

CHANGEOVERS AT IEEE TRANS. PAMI

Change of EIC: Professor Rangachar Kasturi is completing his term as the Editor-in-Chief of Transactions on PAMI at the end of 1998. In January 1999, Professor Kevin Bowyer (kwb@csee.usf.edu) at the University of South Florida began his term as the Editor-in-Chief.

Change of submission procedures: Currently, submissions to PAMI are sent to the EIC's office. Submissions should now be sent to the Computer Society Press office. Send six copies of your manuscript, each complete with illustrations, abstract, and five to ten index terms to:

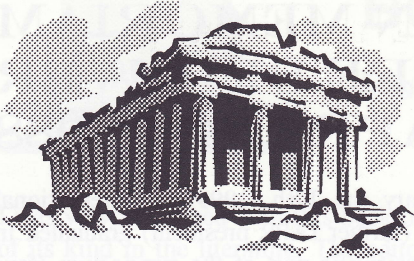
PAMI Transactions Assistant, IEEE Computer Society, P.O. Box 3014, Los Alamitos, CA 90720

Include your cover letter in the same package as the copies of your manuscript. <<Electronic submissions>> are encouraged! Papers may be submitted by ftp or email. For details, consult the Transactions web page at <http://www.computer.org/tpami/>

Brief "State of the Journal" notes: Publication backlog once the author submits final materials of an accepted paper is near zero! The most recent Journal Citations Report gives "impact factor" ratings which show that PAMI continues as 'the' journal in its areas of emphasis:

Trans PAMI [2.09]; AI Journal [2.05]; IJCV [1.66]; Trans Med Im [1.61]; Trans NN [1.59]; Mach. Learn. [1.40]; Trans IP [1.06]; Trans SMC [0.81]; Patt. Recog. [0.69]; PRL [0.33].

Rangachar Kasturi and Kevin Bowyer.



FORUM

Marco Ferretti asks:

WHY IS THE PRIP COMMUNITY NO LONGER INTERESTED IN MACHINE ARCHITECTURE?

During my past appointment as chairman of TC-6, the technical committee on special purposes architectures, I have witnessed a steady decrease in interest in the field. This short note is a contribution that reflects my views, which hopefully will solicit a discussion. At the outset, a couple of questions: is it true that the PRIP community is no longer attracted by this field? and secondly, is this a trend of this community, or a more general one? The first answer is definitely 'yes'; the second one, a less certain 'possibly'. Let us analyse the number of papers broadly associated with the issue of hardware architectures and of parallel processing that appeared in the proceedings of the ICPR over the last 20 years; the figure has dropped close to zero in the last issue, and I doubt kangaroos can be blamed for that!! On top of that, the very structure of the event was changed at some point to host parallel tracks, and the track on architectures flourished in the early 90s, to become less and less attended subsequently. The very reference to 'architectures' in the headlines of the '92 conference was changed to 'parallel computing' in '94, to 'parallel and connectionist systems' in '96; in the last issue, there is just a faint reference to 'software/architectures' as a subject item of the 'algorithm & techniques' track. Will the re-established name within the Y2K framework of Barcelona make a difference? One might wonder if the researchers that have been active in architectures for vision and pattern recognition within IAPR have now moved elsewhere. All through the last 20 years, other workshops and similar events have offered a home to the field: the Multicomputer Workshops series, an initiative very close to IAPR, if only because of the personal involvement of the organizers; the CAPAIDM/CAPAMI-CAMP series, born outside IAPR but very much close to it for similar reasons, just to mention a few. The trend in recent issues of the last series is similar, though less strong: fewer submissions, smaller attendance. Why? I believe there are two sets of reasons: some have a foundation in the scientific interest that the field has offered to researchers, some in the more mundane aspects of fund raising. Finally, advances in technology also play a role.

In the seventies and even in the eighties, the landscape was wide and open: general purpose processors were ugly systems, totally unsuited to the needs of image and signal processing. The cost and the performance they offered motivated the effort of building working systems dedicated to the field. From the perspective of researchers, almost everything had to be set up from scratch: the overall system architecture, the different parallel frameworks, the layering of possibly different structures to match different

abstractions in the so-called 'low-to-high' chain of processing steps, the exploitation of the emerging VLSI technology, the design of the software required to put the new systems at work, and so on. Energies could be steered towards an attractive research field rich in diverse streams, and wide enough to create a sort of momentum. Some groups ventured to the ambitious task of turning dreams into reality by actually building what they had designed; time has made it clear that this is another story. While it is certain that more can be said, more can be designed, more can be speculated, I have the feeling that this is a 'second order' activity. The world goes on, people change in time and other scientific areas open up: the linear vs. grid vs. thorus vs. reconfigurable topology issue is no longer an issue, nor is the systolic vs. pipeline vs. custom design option. So, are people bored? I believe so, at least to some extent.

Money: Who worked in this field within academic institutions depended largely on grants from government. Such money disappeared. If my analysis of the scientific relevance and innovation thrust is correct, the funds available for 'basic, long term research' have fled elsewhere. Nowadays, funding authorities tend to support research that has a strong fallback onto applications. Designing architectures for PRIP cannot be considered a major application oriented area today. Indeed, many applications involving 'still' images and even video can be realized within their targeted constraints (cost, response time) using off-the-shelf video subsystems within 'standard' PCs. This brings us to the third factor.

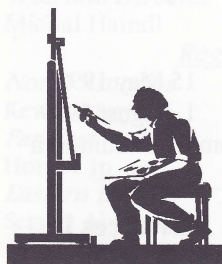
Technology: The world of mainstream, general purpose processing has gone a long way in this decades. RISC architectures on one side, the evolution of DSPs into the so-called Video Processors, and the sheer giant leap in microprocessors and memory subsystems performance due to ever increasing silicon integration and packaging capabilities have raised the question of the usefulness of 'architectures for image processing' at all. As an example, automatic vehicle guidance is an application that has been developed by a few groups both in the USA and in Europe. At the outset, all groups designed their systems around a custom-designed parallel image processor. Recently, at least in one case, a successful vehicle has travelled on Italian highways under the control of PC based video application, that easily substitutes the custom system.

Has the community of researchers left any heritage at all? Certainly yes. Multimedia extensions embedded in most

MEETING REPORT

current microprocessors and RISC platforms are SIMD processing within the microarchitectures of the CPU. The wider the paths from memory to the core of the chips, the higher the SIMD parallelism that will be available; currently, a meager 4!. In depth analysis of some implementations highlights that even in this case the true bottleneck is the software environment. No C compiler currently knows how to exploit multimedia SIMD extensions, and hand crafted assembly code is mandatory to obtain any speed up (provided that you are able to use the caches consistently). Back to the old days? Or is even this feature just a market flag? I doubt that such extensions are actually used in applications other than desktop image enhancement for picture processing.

In writing these few paragraphs, I realize that many more items should be discussed. I leave room for the arguments that others will raise.



The Editor

Replies

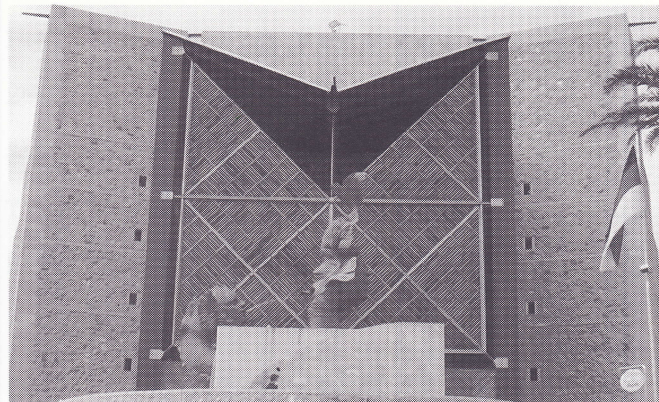
Thank you for all your letters. Responses to the Spring Forum article have already been published on the IAPR web site, access on: <http://peipa.essex.ac.uk/iapr/> and I wish we had room to reproduce them fully here. Please look at the web pages and see the complete letters; but summarising, *Roop Goyal*, (USA), agrees with the general ideas put forward in the article and feels that although we are a long way from successfully emulating human vision, we have nevertheless, made some hopeful steps in the right direction; he supports the idea of a 'top down' approach to making more progress.

Ron Britt (France), takes a much more cynical and critical look at our research progress. He clearly takes a very dim view of the achievements of university researchers and would appear to think that the only real progress has been made by industry based engineers and scientists. I hope you won't let him get away with this.

Some of you have expressed the wish for us to include more information about forthcoming meetings. Our present policy is to reserve space only for IAPR sponsored meetings. In giving IAPR sponsorship, the Association aims to give special coverage to these meetings and if all meetings are advertised, this is not achieved. Contact Anil Jain for IAPR sponsorship information: jain@cps.msu.edu

Please keep writing to us. This is your Newsletter and your input is what will make it worth reading.

The First International Conference on Vision Systems, ICVS'99, was hosted by the University of Las Palmas de Gran Canaria and held at the Alfredo Kraus Auditorium and Convention Centre (photo below), in Las Palmas, Gran Canaria, Spain, from 13th to 15th of January 1999, with a total of more than 80 participants.



The motivation for ICVS is that the field of computer vision has reached a level of maturity that allows for research not only to focus on individual methods, but also to build fully integrated computer vision systems of significant complexity. This opens up to a number of new problems related to architectures, system integration, validation of systems using benchmarking techniques etc. So far, the majority of vision conferences has concentrated on component technologies, thus there has been a need for a conference focusing on the system aspects of vision.

ICVS was organized as a single-track conference consisting of high-quality previously unpublished papers on new and original research on computer vision systems. All contributions were presented orally. A total of 65 papers were submitted for consideration by the conference, mostly from Europe and USA. All papers were reviewed by three reviewers from the programme committee. Thirty-two of the papers were selected for presentation. The proceedings are published in Lecture Notes of Computer Science, no. 1542, from Springer Verlag.

The Organizing Committee had succeeded in attracting three renowned invited speakers, with special knowledge of system building, adding further to the success of the conference. These were: Prof. Ernst D. Dickmanns, ISF, Federal Armed Forces University, Munich, Germany, Prof. Takeo Kanade, U.A. Helen Whitaker Professor of Computer Science/Director of the Robotics Institute, Carnegie Mellon University, USA and Prof. Michael Brady, BP Professor of Information Engineering, Oxford University, UK.

The Conference was very much appreciated by the attendees and speakers, and there was a strong support for making ICVS a bi-annual event, with the next conference site being somewhere on the east coast of the USA during 2001.

Claus Andersen

IAPR SPONSORED MEETINGS

Fundamental Structural Properties in Image Analysis - FSPIPA'99

Budapest Hungary 6-8 September 1999

The workshop will be held at the Computer & Automation Research Institute (MTA SZTAKI) following CAIP'99, (Ljubljana, Slovenia 1-3 Sept), and will encompass:

- Definitions of Fundamental Structure
- FSPs in the spatiotemporal domain
- Statistical approaches to FSPs
- Quantitative & qualitative evaluation of FSPs
- FSPs in image modeling & processing
- Defining distortion measures
- Spatial transformations & variances of FSPs
- FSPs & pattern orientation
- FSPs, fractals & scale-space
- The influence of sampling structure & noise
- Software & hardware vision systems using FSPs
- FSPs in computer vision applications
- FSPs as human eye may perceive them

Authors wishing to submit a paper to the workshop should send 4 copies of their draft paper which should be 4-6 pages. The 1st page should contain title, author's name, affiliations, address/tel/fax/email and an abstract maximum 100 words. Electronic submission is also allowed - but **do not submit in both printed and electronic form.**

Submit by mail to:

Tamás Szirányi
MTA SZTAKI, Budapest, Lágymányosi u 11, 1111 Hungary

Submit by email to:

sziranyi@lutra.sztaki.hu

Draft Paper Submission

15 March 1999

Preliminary Registration:

15 March 1999

Information: <http://visual.ipan.sztaki.hu/FSPIPA99>

International Workshop on Machine Learning & Data Mining in PR Leipzig Germany 16-18 September 1999

The aim of the workshop is to bring together researchers from all over the world dealing with machine learning for image processing, image interpretation and computer vision in order to discuss the recent status of the research and to direct future developments. It is the first workshop of a series to deal with this specific topic. Researchers from the machine learning community are invited to present new topics in learning which might be of interest.

Paper submission should be related, but not limited to any of the following topics; (applications can be medical, industrial or biological):

- Inductive learning
- Conceptual learning
- Case-based learning
- Statistical learning
- Neural net based learning
- Probabilistic information retrieval

Participants should submit three copies of their contribution which should be not more than 15 pages (double spaced) and should present original work of the author(s). **In addition** an electronic version should be submitted.

Submit by mail to:

MLPR Workshop Secretary
Arno-Nitzsche-Str 45, 04277 Leipzig Germany.

Submit by email to:

ibaimldm@aol.com

Submission deadline:

15 May 1999

Final Paper:

1 August 1999

Information:

<http://members.aol.com/ibai/mldm.htm>

4th International Conference on Advances in PR & Digital Techniques (ICAPRDT'99) Calcutta India 28-31 December 1999

The objective of the meeting is to bring together researchers working in pattern recognition, digital techniques and related areas under one umbrella; the theme will be applications of PR & digital techniques to intelligent systems. Topics will include, but are not limited to:

- Pattern recognition
- Image processing & computer vision
- Artificial intelligence
- Signal processing (including speech)
- Radar/satellite remote sensing
- Atmospheric modelling & forecasting
- Neuro-computing
- Fuzzy systems
- Hybrid soft computing systems

Authors should submit three copies of the full paper not exceeding four A4 pages which should include complete affiliation, address, tel/fax/email.

Submit by mail to:

Convener ICAPRDT
Electronic & Computing Sciences Unit
Indian Statistical Institute, 203 B T Road,
Calcutta 700 035, India

Submission deadline:

15 July 1999

Final Paper:

15 October 1999

Information:

<http://www.isical.ac.in/~icaprdt99>



NOTICE BOARD

IAPR NEWSLETTER

Published in association with the Web Site
<http://peipa.essex.ac.uk/iapr/>



DEADLINE SUMMER EDITION - 31 MAY 1999

Editorial Office

66 Weston Park, Thames Ditton Surrey KT7 OHL, UK

Editor

Michael Duff MichaelDuff@compuserve.com

Book Reviews Editor

Petra Perner ibaiperner@aol.com

Distribution/Layout

Susan Duff sduff@compuserve.com

Web Site Director

Michal Haindl haindl@utia.cas.cz

Regional Correspondents

North America

Kevin Bowyer kwb@csee.usf.edu

Far East

Horace Ip cship@cityu.edu.hk

Eastern Europe

Sergey Ablameyko abl@newman.basnet.minsk.by

Western Europe

Vito Di Gesù digesu@ipamat.math.unipv.it

Nordic

Gunilla Borgfors gunilla@cb.uu.se

Australasia-Pacific

Anthony Maeder a.maeder@qut.edu.au

Indian Sub Continent

Babu Mehre mehre@cmcltd.com

IAPR EXECUTIVE COMMITTEE

President	Edzard Gelsema gelsema@mi.fgg.eur.nl
Ist Vice President	Horst Bunke bunke@iam.unibe.ch
2 nd Vice President	Rangachar Kasturi kasturi@cse.psu.edu
Secretary	Gabriella Sanniti di Baja gldb@imagm.cib.nsnr.it
Treasurer	Walter Krpoatsch krw@prip.tuwien.ac.at
Past President	Bob Haralick haralick@ee.washington.edu

ADDRESS CHANGES

Josef Bigun has moved to Sweden:

Professor J Bigun, Halmstead University,
Box 823, S-301 18 Halmstead, Sweden.
Tel: +46 35 16 72 27; Fax: +46 35 21 67 24
Email: JosefBigun@cist.hh.se

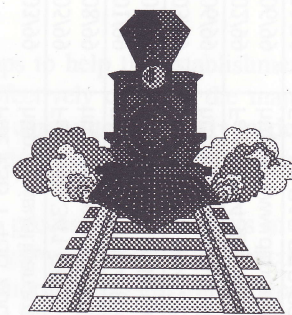
South Africa has a new Governing Board Member:

Professor B Herbst, Department of Applied Mathematics,
University of Stellenbosch, Matieland 7602, South Africa
Tel: +27 21 808 4127; Fax: +27 21 808 3778
Email: herbst@ibis.sun.ac.za

New email address, Chairman TC3:

Professor A Visa ari.visa@saunalahti.fi

EXPRESS DELIVERY TO YOUR DOOR!



Did you know that you can have the IAPR Newsletter delivered directly to your door rather than via a bulk mailing distributor from your national organisation? Your newsletter can be mailed directly to your home address from the United Kingdom as soon as it is printed. Five of our members currently choose this method: Canada, Germany, Italy, Norway and Sweden. The annual charge for this service is only US\$ 3.50 - less than 90 cents an issue - and this includes postage and packing

Persuade your national representatives to select this option now
and receive your newsletter within days of printing!

Details from the editorial offices.

*The views expressed in this Newsletter represent the personal views of the authors
and not necessarily those of their respective host Institutes nor IAPR*



FORTHCOMING IAPR CONFERENCES WORKSHOPS AND EVENTS

Check updated information on: <http://peipa.essex.ac.uk/iapr/>

Year	Event	Location	Deadlines	Contact
1999				
10-12 May	2nd International Workshop on Graph-Based Representations in Pattern Recognition	Wachau Austria	Manuscript: 30/01/99	Fax: +43 1 586 3260 kvw@rpb.uwien.ac.at http://www.prip.uwien.ac.at/TC15/GBR99/cfpbr99.html
18-20 May	5th International Conference on Pattern Recognition and Information Processing	Minsk Belarus	Manuscript: 15/11/98	Fax: +375 17 231 8403 pmp99@newman.besnet.minsk.by
18-21 May	Computer Vision for Industrial Applications	Quebec Canada	Abstract: 31/10/98 Final Manuscript: 15/03/99	Fax: +1 819 821 8200 nouboud@uqtr.quebec.ca
VI/QCAV				
18-21 May	Vision Interface '99	Trois-Rivieres Canada	Abstract: 31/10/98 Final Manuscript: 15/03/99	Fax: +33 385 73 10 99 s.kohler@utlecreusot.u-bourgogne.fr http://www.dnri.usherb.ca/conferences/VI-99/
2-4 June	Pattern Recognition in Practice VI	Vieland Netherlands	Abstract: 01/11/98 Final Manuscript: 01/05/99	Fax: +31 10 4362882 prip6@mi.tgg.eur.nl
PRP-VI				
2-4 June	Third International Conference on Visual Information Systems	Amsterdam Netherlands	Abstract: 15/11/98 Final Manuscript: 02/05/99	VISual99@wins.uva.nl http://www.wins.uva.nl/events/VISual99
VISUAL99				
7-11 June	11th Scandinavian Conference on Image Analysis Bridging Continents and Millennia	Kangerlussuaq Greenland	Abstract: 02/11/98 Final Manuscript: 01/03/99	Fax: +45 4588 1397 scia99@irmm.dtu.dk http://www.diku.dk/scia99/
SCIA '99				
28-30 June	9th Biennial Conference of the International Graphonomics Society	Singapore	Abstract: 15/01/99 Final Manuscript: 15/04/99	Fax: +65 793 0997 igs99@ntu.edu.sg http://www.ntu.edu.sg/home/asgleedham
IGS99				
6-9 Aug	Statistical Methods for Image Processing	Uppsala Sweden	Abstract: 31/03/99 Final Manuscript: 30/06/99	delfrich@math.uu.se http://www.math.uu.se/~tomb/statrim.html
SMIP'99				
30-31 Aug	International Workshop on Biomedical Image Registration	Bled Slovenia	Abstract: 01/02/99 Final Manuscript: 01/05/99	Fax: +386 61 1264 630 fer@fe.uni-lj.si http://biprog.fe.uni-lj.si/wbir00
WBIR'99				
1-3 Sept	8th International Conference on Computer Analysis of Images and Patterns	Ljubljana Slovenia	Abstract: 15/01/99 Final Manuscript: 01/04/99	Fax: +386 61 1768 647 franc@fr.uni-lj.si http://razor.fr.uni-lj.si/CAIP99
CAIP'99				
6-8 Sept	Fundamental Structural Properties in Image & Pattern Analysis	Budapest Hungary	Manuscript: 15/03/99	Fax: +36 1 466 7503 sziranyi@lutra.stzaki.hu http://visualipan.stzaki.hu/FSPIPA99/
FSPIPA'99				
16-18 Sept	IAPR International Workshop on Machine Learning and Data Mining in Pattern Recognition	Leipzig Germany	Abstract: 15/05/99 Final Manuscript: 01/08/99	Fax: +49 341 8665 636 iba@mlm@aol.com http://members.aol.com/iba/mldm.htm
MLDM'99				
20-22 Sept	5th International Conference on Document Analysis	Bangalore India	Abstract: 29/01/99 Final Manuscript: 31/05/99	Fax: +1 650 854 8740 hull@crc.nrc.ca http://www.cedar.buffalo.edu/icdar99
ICDAR'99				
26-27 Sept	Third IAPR International Workshop on Graphics Recognition	Jaipur India	Abstract: 01/03/99 Final Manuscript: 15/06/99	Fax: +1 914 644 2561 abu@basit.com http://graphics.basit.com/iapr-tc10/grec99/
GREC'99				
27-29 Sept	10th International Conference on Image Analysis and Processing	Venice Italy	Abstract: 28/02/99 Final Manuscript: 01/06/99	Fax: +39 432 558499 iclap99@dimi.uniud.it http://www.dimi.uniud.it/~iclap99
ICIA'99				
4-8 Oct	Second International Conference on 3-D Digital Imaging and Modeling	Ottawa Canada	Abstract: 05/03/99 Final Manuscript: 11/06/99	Fax: +1 613 952 0215 pierre.boulanger@ift.nrc.ca http://www.vitl.nrc.ca/3DIM99
3DIM'99				
28-31 Dec	4th International Conference on Advances in Pattern Recognition and Digital Techniques	Calcutta India	Abstract: 15/07/99 Final Manuscript: 15/10/99	icaprtd99@isical.ac.in http://www.isical.ac.in/~icaprtd99
ICAPRDT'99				