IAPR

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

NEWSLETTER

Contents

From the Editor's Desk

Dear Everybody,

There is a saying, the origin of which escapes me, that goes like this: "When the mountain does not go to Mohamed, Mohamed goes to the mountain!" This is what comes to mind with respect to the recent debates about Science and Research in economically disadvantaged countries.

The world is not homogeneous and the world is fairer if it becomes homogeneous with respect to opportunities offered to its citizens. Perhaps not everybody agrees with this statement, but I believe the majority does. Scientists do not have the same opportunities and the same resources around the world either to develop and present their work, or to listen to other people's work. A lot of talent goes wasted and a lot of scientific progress is hindered because of that.

It has often been suggested that scientists from ex-Eastern block countries should be offered special allowances to participate to major International Conferences, or page charge wavers to publish in certain re-known journals *(NOTE: IAPR sponsored journals are re-known and do not have page charges-I have to put from time to time a good word for IAPR otherwise the Executive committee will dismiss me!)*. Conference organizers, and journal managers, however, have to balance their books at the end of the day, and this is not always easy. Besides, there are several countries, apart from the ex-Soviet block where the salaries and resources of the academics are orders of magnitude lower than those in the Western world. Where does one draw the line? Which scientists should be helped and which should be left to struggle on their own? Perhaps the mountain cannot be moved to Mohamed! But then, maybe we can make Mohamed move to the mountain! What about organizing our major events in less privileged countries? What about sponsoring/adopting/enhancing their major events and publications? Clearly, one should not organize the nth ICPR among some starving tribes in Africa; they would hardly be benefited from it!

However, there are plenty of countries with substantial intellect to offer that could host most if not all of our major outlets of expertise! True, scientists from Western countries will probably loose something if that policy were to be adopted, but it would be a mere scratch in their budget and a mere ripple in their CVs not to be able to claim the organization of a major scientific event! On the other hand, they will have the chance to travel to some of the countries that had been closed to the western visitor for decades if not for centuries!

For things to work, however, nice ideals must be escorted by nice money! Nobody likes to feel that is taken for a ride and that is the feeling created if American prices are charged in countries where things and services cost orders of magnitude less than in America! Perhaps conference organizers of countries that need to be helped should bear that in mind when they set up their budgets. It must be remembered that fares to such countries are usually very expensive for the western visitor and this expense should be compensated by the local expenses being kept low. Only then will Mohamed be able to go to the mountain, meet the local people, talk with them, listen to them, learn from them, teach them and be friends happily ever after!

And as the season calls it:
PEACE ON EARTH AND HAPPY NEW YEAR!

Maria Petrou

WELCOME TO THE 33rd IAPR MEMBER!

The Russian federation Association for Pattern Recognition and Image Analysis (RAPRIA) has now become the 33rd member of IAPR. The effective size of RAPRIA is 877 members (August 31, 1995), which will make the RAPRIA a category C member with four Governing Board representatives.

RAPRIA was established in 1992 as national non-profit scientific and professional organisation, whose membership is open to scientists, experts, professionals and students working in the field of pattern recognition, forecasting, image processing, analysis, recognition and understanding. RAPRIA has local and regional branches in the main scientific centres of the Russian federation (Moscow, St. Petersburg, Belgorod, Dzerzhinskij, Ekaterinburg, Izhevsk, Joshkar-Ola, Kazanj, Kursk, Nizhnij Novgorod, Novgorod, Novosibirsk, Penza, Permj, Pushchino-na- Oke, Samara, Taganrog, Tomsk, Tula, Ufa, Uljanovsk, etc). The present chair is Professor Yuri Zhuravlev, full member of the Russian Academy of Sciences, and the Executive Secretary is Dr-Eng Igor Gourevitch, who has been functioning as IAPR contact person for the last three years.

As reported in recent Newsletters, RAPRIA is very active, organising several meetings and workshops each year. A warm welcome to this sizable addition to the IAPR!

Gunilla Borgefors
Membership Committee Chair

AMENDMENTS & ADDITIONS TO THE IAPR DIRECTORY

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The New GB members from Russia

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A REMINDER!

The deadline for the IAPR fellowship nominations is January 15, 1996. For any inquiries, please contact Dr Pierre Devijver, (Tel: +33 98 00 13 00, Fax: +33 98 00 10 97, pa.devijver@enst-bretagne.fr)

TC14: IAPR IMAGE PROCESSING
Technical Committee

The committee is intended to provide a focus for technical activities of IAPR members in the image processing area. The work of the committee will to a large extent be determined by the interests and scientific expertise of the committee members. However, a few comments to indicate the focus of TC14 activities are in order.

The demand for robust and advanced image processing methods is continuing to increase in pace with the development of the technological society as a whole. An increasing amount of high resolution data is being produced by advanced 3-dimensional and 4-dimensional (space and time) medical imaging techniques, e.g. MR, PET, CT and Ultrasonic volumes and sequences. The development of fast hardware calls for methods which can handle more complex tasks in real time - reasonably priced hardware for advanced processing of video sequences will be available in the near future.

Another important venture in modern society is the development of industrial robots. The range of tasks in which such machines can be used is presently very limited and extending this range is one important challenge to be met by scientists and engineers. The paradigm of 'active vision' has, in recent years, been accepted in the computer vision society as a promising way to increase this range and at the same time help solve fundamental problems in vision. The development of techniques suitable for use in real time active vision systems has thus become an important issue.

A modular approach is a key feature in the design of complex systems. Many candidates for useful modules performing various tasks, can be found in traditional image analysis. However, a common problem is that, when trying to solve more complex tasks, these modules are often not suitable as components of a larger system where modules interact. An important reason for this incompatibility is that information is represented in different ways for different types of features. It would seem well worthwhile to discuss the possibilities to attain standards for representation of such information.

Evaluation of new methods and algorithms is a vital part of the research process. It is unfortunate that there exist very few (if any) commonly accepted evaluation procedures in the image processing field. Evaluation is often done by 'looking at' the results. This causes problems for individual researchers and has caused some workers to question the scientific value of research within the field. No doubt, the reason for this state of affairs is that the problem of finding precise evaluation procedures, with the potential of being widely accepted, is very difficult. It is, however, obvious that any advancement in this area would greatly benefit the community.

To indicate research topics of TC14 at a more detailed level a few items which lie within the 'operating range' of the committee have been listed below.

Applications: Motion, Disparity, Registration, Orientation, Spectrum, Texture, Adaptive filtering

Design: Filters, Separable filters, IIR vs FIR, Filter banks, Representations, Modularity

Evaluation: Performance criteria, Error measures, Databases of test data

Communication will preferably be through email. If you want to be on the TC14 mailing list or have any comments regarding future activities of the committee, please send me an email.

Hans Knutsson,
Chairman TC14, Dept of Elec Engin, Linkoping University, S-581 83, Linkoping, Sweden, Tel: +46 13281887, Fax: +46 13138526, e-mail: knutte@isy.liu.se


Update on the King Sun Fu Fund Appeal Response

The K S Fu Fund Appeal announced in the April issue of the IAPR Newsletter has generated an encouraging response. In total US$ 6170 has been received both from individual members and from member societies by the end of November 1995. The donations exceeded the target set by the anonymous challenger who augmented the sum collected by US$ 2000 to bring the total to US$ 8170. More than half of the donations were received from the Chinese Image Processing and Pattern Recognition Society of Taiwan and its individual members, many of whom knew Professor King Sun Fu personally. I would like to thank all the contributors for their generous gift, namely:

Individual Members: K Abe, S H Chang, Z Chen, Y C Cheng, K C Fan, F Freeman, C S Fuh, R Haralick, B J Jan, B S Jeng, I C Jou, L Kanal, R L Kashyap, J Kittler, H J Lee, J J Leou, C F Lin, L G Shapiro, Y L Tang, W H Tsai, A Rosenfeld, J F Wang, C K Yang, S S Yu.

Member Societies: British Machine Vision Association, Chinese Image Processing and Pattern Recognition Scoiety, and Danish Pattern Recognition Society.

The K S Fu Fund raising campaign will remain open until the next ICPR in Vienna where the final figure raised will be announced.

Josef Kittler, President
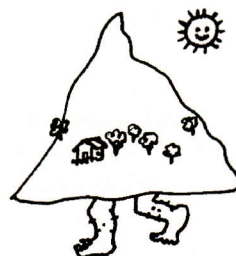
What is this? Answer on p.3

NEWS FOR MEMBERS

AMENDMENT OF THE IAPR CONSTITUTION: ARTICLE 7.2

The Governing Board has voted by more than 2/3 majority (44 votes in favour and 2 against) to change article 7.2 of the IAPR constitution to allow members to pay their dues in currencies other than US$ if they wish. The text of the new article reads:

"All dues will be payable in either USA dollars or other currencies specified by the Treasurer at the appropriate exchange rate, by methods of transfer to be agreed with the Treasurer."

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NEW PROCEEDURES FOR THE NOMINATION OF IAPR OFFICERS

During the past several months, the Constitution and By-laws Committee, the Nominating Committee and the Executive Committee have been working on developing articles of Constitution and Guidelines for having a fair and open election. In this spirit, the Articles of Constitution and Bylaws were modified. In addition, Guidelines were developed for the operation of the Nominating Committee. The articles of the Constitution as well as the Guidelines are outlined below:

Article 6.2: The Nominating Committee will consult with members of the Governing Board and with other members of the Association and will compile a list comprising at least one nomination for each Office. Candidates accepting nomination are required to provide their written consent and their curriculum vitae. The list of nominees and a biographical sketch of each nominee will be distributed to the Governing Board no later than six months before the date set for the Election of Officers.

Following the publication of the list, members of the Governing Board may make further nominations by sending to the President the name of the candidate, written consent from the candidate and a curriculum vitae as before, together with a seconding letter from another member of the Governing Board. These nominations must reach the President no later than three months before the date set for the Election of Officers. Details of these further nominations will be distributed to the Governing Board prior to the Election.

Article 6.3: Nominations at the Election meeting may be made from the floor provided that each nomination has at least four seconders of which no more than one may be from the same country as the candidate and no more than two from any one country. Written agreement must be provided to the President from the nominee, proposer or seconder not present at the meeting.

The above articles are supplamented by the following guidelines:

Guidelines for the Nominating Committee

The nomination process will begin 9 months prior to the GB meeting and it will continue until the election time. The process will consist of three distinct ways in which a person may be nominated for a given office. Three distinct manners are provided so that a free and an open election may be held at the GB meeting.

Time: –9 months: The NC will seek informal suggestions from the GB and other members of the IAPR community for various positions to be filled at the forthcoming election at the GB meeting. A GB member or other person need provide only the name, the office for which the person should be considered and a brief case for support (person's qualification for the office). These suggestions, which are not considered as formal nominations, should reach the Chairman of the NC by -8 months.

(Explanation: The purpose of the solicitation is to canvass the IAPR community and the GB for their thoughts and suggestions. The NC will do the legwork and formalize the nominations.)

Time: –7 months: The NC prepares a list of candidates proposed for various offices. NC will informally discuss the candidates with the members of the GB making an assessment of the support of GB for the candidates. Based upon the support expressed by the GB, and taking into account the ability of the candidates, geographical distribution and other relevant information available, NC prepares a slate of officers for Nomination. The preparation of the nomination includes the consent of the individuals, and the compilation of the vitae of the candidates.

(Explanation: This is the value added step by the NC. The collective thoughts of the NC are embodied in this list.)

Time: –6 Months: The NC distributes the slate of officers to the ExCom and the GB. The slate may consist of multiple or single candidates for each office. At this stage the obligation of the NC is complete.

After the announcement of the slate of officers by the NC, the President seeks/invites additional formal nominations from the GB. A member of the GB may make a formal nomination by providing the following information to the President:

a. Name of the candidate and the office
b. Consent of the candidate in writing
c. Vitae of the candidate
d. Seconding letter from another GB member

This nomination should reach the President at -3 months. On receipt, the President will decide if the nomination is in order. If the nomination is not in order, the President will inform the nominator, allowing the nominator to make up

the deficiency. However, the completed/corrected nomination should reach the President by -2 months.

(Explanation: The purpose of this step is to avoid any last minute conflicts. If any member of the GB feels that certain names should complement the nomination list, they are free to make formal nomination. This step avoids the controversy that has led to nominations on the floor.)

Time: 0 months At the GB meeting, additional nominations from the floor may be made if they conform to the following rules:

a. Each nomination will consist of the name of the candidate and the name of the office.

b. The nomination will have four seconders.

c. No more than one seconder may be from the same country as the candidate.

d. No more than two seconders from the any given country.

e. At least two distinct regions of the world are represented among the seconders.

f. If the candidate being nominated is not present at the meeting, a written consent from the candidate will be provided to the President.

g. If a seconder is not present at the meeting, a written letter seconding the nomination will be provided to the President.

h. The President decides if the nomination is in order.

At the time of election, the candidates nominated by the NC, the candidates nominated by the GB members and the candidates nominated from the floor will be considered as candidates for election. The election will proceed according to the set forth in the C and B of the association.

(Explanation: The above process is designed to achieve input from all members of the GB at various stages of the nomination process. At earlier stages the nomination process depends upon the NC whereas at later stages, it depends upon the participation of the GB in the nomination process. The chairman of the NC (Past President) and the President are the main persons involved in evaluating and preparing the slate and other materials, and they are unlikely to stand as candidates for any office.)

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IAPR ON THE NETWORK!

The IAPR governing board approved at its Jerusalem meeting the creation of the IAPR WWW server. This server is currently under development by Dr A Clark from Essex University in the UK and can be reached through its URL address http://peipa.essex.uk/iapr/.

The server is intended to keep IAPR information of general interest like the IAPR organizational structure, contact addresses, publications, awards as well as temporal information about conferences and IAPR news. There is no intention to compete with the IAPR Newsletter. Both resources are seen as complementary to one another. Therefore the temporal information will be limited to material not suited for the Newsletter like links to conference home pages, some other Internet resources, etc.

I would like to encourage our members to supply general interest material of general interest to the server. Material should be submitted to the editor via email (haindl@utia.cas.cz) in the HTML form, embedded images in GIF or XBM formats. Detail information about hyperlink requests, coding formats, temporal validity, naming convention, etc can be found in the submission procedure which is available on the server. We are especially expecting the Technical Committees and the Member Societies to set up their home pages so they can be linked to the server. Some inspiring examples are already available eg the TC13 home page. All material linked to the server should be in English or at least bilingual in the case of Member Societies home pages with clear distinction between English and the local language information structures.

Michal Haindl,
Czech Academy of Sciences,
Czech Republic

Call for Nominations
for the IAPR Executive Committee

At the next GB meeting in Vienna in less than a year, the GB will elect new IAPR Officers. The Nominating Committee solicits your help in bringing to the attention of the Committee persons who you feel are suitable for the jobs of the President, Vice Presidents, Secretary and the Treasurer. You may do so by sending an email, a fax or a letter to any of the members of the Nominating Committee. It would be most helpful if the suggestions and comments reach the Committee by January 31, 1996.

The members of the Nominating committee are :
Professor J. K. Aggarwal (USA) Chairman
(aggarwaljk@mail.utexas.edu)
Dr. M. Ejiri (Japan)
(ejiri@crl.hitachi.co.jp)
Professor E. S. Gelsema (Netherlands)
(gelsema@mi.fgg.eur.nl)
Professor H. Niemann (Germany)
(niemann@informatik.uni-erlangen.de)
Professor C.Y. Suen (Canada)
(suen@cenparmi.concordia.ca)

(For their full contact addresses please consult the IAPR directory)

Professor J. K. Aggarwal,
Committee Chairman

Answer to question on p.3:
"The mountain going to Mohamed!"

PATTERNS TO BE DISCOVERED IN VIENNA!
An invitation to ICPR 96!

Arriving in Vienna you will read at the airport or on the beltway the slogan: "Vienna is special!" Getting curious you ask the first person: "What's so special about Vienna?", and they may answer:

For me Vienna is a famous witness of history. You still find traces of the Romans, the 2000-year-old remnants of the fortified military camp of Vindobona on this side of the Danube. Walking through the inner city you discover the medieval trade routes with many street names telling stories about ancient times. In 1683, the Turks stood in front of the city walls to extent their footage in Europe but they had to leave the region empty-handed. After this event a building boom developed in Vienna during the Baroque era producing many noble palaces like Schoenbrunn and the Belvedere Palace. The city was then the capital of the Habsburg Empire and later on of the Austro-Hungarian Monarchy. During the 19th century the "Ringstrasse" was built, ordered by Emperor Franz Joseph to replace the city walls. It is a wide boulevard with many magnificent buildings erected along its length. These include the Vienna State Opera, the Parliament, the Museums of Fine Arts and of Natural History, the Burgtheater, the City Hall, the University, and one of the most striking buildings along this famous boulevard: the Hofburg. And now the special: You can have a city tour to see all these famous buildings by just taking tram line "D"!

Asking a second person you may hear: After 1918 Vienna remained but the capital of the small country of Austria, yet, a lot of people are convinced that Vienna is still the world capital in one area: in music! Even in summer there are opera performances, for example in the park of Schoenbrunn Palace. As another summer event the Rathausplatz (the huge site in front of the City Hall) is turned into an open air cinema, where film productions of operas are shown. However, most special to music lovers in Vienna is the "Musikverein", a building with several concert halls, among them the "Golden Hall", which is said to have the world's best acoustics. (See opening ceremony of ICPR'96!)

A third person might finally answer: Special about Vienna is its "Gemuetlichkeit". The coffee houses of Vienna have a reputation of being oases of good living. You may spend a whole afternoon there with a single cup of coffee, talking with friends or reading the newspapers (for free!). In the evening you may change to a "Heurigen". These are small or large taverns in the outskirts where "Sturm" (a special type of young wine, not yet clear, having a sweet taste but already some alcohol) and typical culinary delicacies are served. Cheerio!

You have asked different people and got different answers. So go and find out for yourself what's really special about Vienna for you!

Christa Kropatsch,
Academic Travel Agency, Vienna, Austria

BOOK REVIEWS

Three-Dimensional Computer Vision: A Geometric Viewpoint by *Olivier Faugeras*. MIT Press, 1993, 663 pages, ISBN 0-262-06158-9.

This book is mostly about the author's own research work and that of his collaborators and students within the Computer Vision and Robotics Laboratory at INRIA, France. This monograph provides a thorough, mathematically rigorous exposition of a broad and vital area in computer vision: the problems and techniques related to 3D vision and motion. The emphasis is on using geometry to solve problems in stereo and motion, with examples from navigation and object recognition.

Chapter 1 introduces an overview of computer vision and gives some main problems existing in this area. In chapter 2 the author gives the necessary background and tools for relating the geometric properties of the environment to what can be measured in an image. In particular, he studies projective geometry which is related to the sort of sensors that machines and humans use for vision. Chapter 3 is the first application of the ideas proposed in chapter 2. It uses projective geometry to model cameras and studies the practical problem of calibrating a real camera. The edges are main geometric features in images and play an important role in image understanding. Therefore, the author describes many kinds of edge detectors in chapter 4. Chapter 5 uses the framework of differential manifolds to establish a solid theoretical basis for representations of simple geometric entities such as points, lines. planes, orientations, directions and displacements, which are routinely manipulated in computer vision problems. Stereo vision is a main trend of research in computer vision and it is studied in chapter 6. The author puts an emphasis on the geometric constraints that can be used to decrease the difficulty of obtaining image correspondence. He also shows in some detail how these correspondences can be used to reconstruct 3D geometric primitives. Chapter 7 investigates the problem of estimating the 3D displacement of a camera given a number of correspondences between geometric primitives in two or three images. This chapter can be seen as a complement of chapters 3 and 6. Chapter 8 introduces the natural tools for tracking geometric tokens in a sequence of images. These tools are recursive least squares methods and Kalman filtering. In chapter 9 the author adopts an even more continuous approach than in the previous chapters, and discusses the problem of computing the 3D motion and structure of a moving curve. Then, in chapter 10, he tries to answer explicitly the question of which representations are useful for navigation, obstacle avoidance and recognition. In the mean time, he introduces several ideas which are essential to shape representation: shape topologies, stochastic geometry and computational geometry. Chapter 11 shows how to bring together many of the concepts introduced in the previous chapters to accomplish some of the perceptual tasks, and describes how to use these representations for recognition and location of objects or for the navigation of a robot. After each chapter the author gives a series of problems and exercises of various levels of difficulty that are intended to complement and help the reader understand the material in the chapter. Answers to these problems can be found in chapter 12.

In summary, this book is certainly necessary and useful for those who are interested in computer vision and image understanding. It can be an excellent reference or textbook for graduate students.

Wen Wei, Northern Jiaotong University, Beijing, China

Vision, Instruction and Action by *David Chapman*, MIT Press, ISBN 0-262-03181-7

David Chapman describes an integrated system called Sonja which is able to take typed instructions, visually examine its environment and interpret what it sees, as well as play video games. The book shows how the integration of three major fields, namely the theory of activity, computational linguistics and machine vision can be achieved. This is demonstrated clearly by Sonja's ability to play autonomously a video game called Amazon and its ability to act on human instructions, for instance to kill monsters, pick and use tools and find its way in a dungeon maze. The graphical demonstration of this is most convincing.

There are nine chapters in this book. The author provides readers from different backgrounds with useful suggestions on how to read the book. Chapter 1 introduces what Sonja does and its contribution to activity theory, computational linguistics and vision research. Chapters 2 and 3 discuss the theory of activity and the cognitive architecture that underlies Sonja. Chapter 4 describes Amazon, while in Chapter 5 the instructions used by Sonja are explained clearly, Chapter 6 further describes Sonja's sensory (vision) and motor systems and in Chapter 7 the implementation of Sonja's central system is described. Chapter 8 describes Sonja's hardware design. Chapter 9 provides an overall evaluation of Sonja, and suggestions for future work are given in the Appendices.

Overall this book makes a good Christmas present!

Margaret Varga, Defense Research Agency, UK

What is this? Answer on p.9

$$\boxed{\textit{CONFERENCE REPORTS}}$$

Report on the CAIP'95 conference
6–8 September, Prague, Czech Republic

Fifteen years of my research career have been spent in close collaboration with Czech scientists. One of the great paradoxes about this tiny country in central Europe, is how it can produce so much talent while constantly subjected to the rough knocks of history. The naming of ten famous Czechoslovaks is not the stuff of trivial pursuit questions. Kafka, Budweiser, Charles IV, Smetner, Vasek Hlavac, Ruzena Bajcsy, Josef Kittler, are all household names! I have long wanted to visit the country. Twice I almost made it. CAIP'95 was the third opportunity that was not going to elude me.

The conference is the sixth in a series originally intended, as the organisers of this years conference put it, "to puncture holes in the iron curtain". The iron curtain has now gone, but the conference remains an important regional event. However, its role has changed from that of providing a forum for scientists whose ability to travel was once constrained politically. CAIP'95 was a truly international scientific event which was easily accessible for scientists from the former communist countries who now ironically find themselves restricted from travel for financial reasons.

The conference venue was on the outskirts of Prague in a comfortable hotel, which was surrounded by a rather drab and distinctly functional post-war housing development from the communist era. This was in complete contrast to the centre of the city with its abundance of Gothic and Baroque architecture. As well as the more formal buildings around Prague castle, the old city across the Charles bridge is full of fascinating sites. One of the most intriguing of these was the 13th century Gothic synagogue. Hence, there was no shortage of potential conference distractions.

The conference programme consisted of two parallel tracks together with two poster sessions. In all some 130 papers were selected for presentation from a total of 260 submissions. The standard was generally high. It is always difficult to select highlights. Instead it is probably better to give some subjective impressions about what distinguished this conference. Above all I believe the unique flavour of this conference was the emphasis on work being conducted rigorously with a sound methodological foundation. All of this good science proved to be a very effective distraction from the tourist attractions of the city.

In addition to the selected technical contributions, there were three invited talks. These were presented by Takeo Kanade, Josef Kittler and Shimon Ullmann. Professor Kanade described the use of the fundamental matrix for visual reconstruction, and presenting examples from tracking and visualisation. Josef Kittler described a new methodology for segmentation which unifies spatial and feature information in a graph-theoretic clustering framework. Shimon Ullmann provided an extensive review of work at MIT and Weizmann on object recognition.

The social programme was full and commenced with an ice-breaker party, which I missed due to a late flight into Prague. However, on arriving I met two colleagues who appeared to have been well thawed-out by the event. On the second night, we were entertained in the centre of Prague at the 12th century Betlemska Chapel. The evening commenced with a concert of works by Czech composers. After this the Dean of the Engineering Faculty of the Technical University presented faculty medals to two distinguished scientists from the former Czechoslovakia who were attending the conference. Both Ruzena Bajcsy and Josef Kittler acknowledged the role that the Czechoslovak educational system had played in providing the foundations for their subsequent scientific careers. To round it all off there was a conference banquet of goulash and salami. On the following evening, the organisers put their reputations on the line when they decided to take us to a brewery. In English vernacular usage the organisational pitfalls associated with this form of entertainment are legendary but unprintable! However, all went well. In addition to providing us with the opportunity to sample the local beer "Staropramen" and an unspeakable form of firewater, we had a provocative after dinner speech from Yannis Aloimonos, who was on his usual excellent form, together with a mime performance from a local artist. The final evening gave participants the chance for guided sightseeing in the centre of Prague. Concluding the tour was an open-house at the Vision Lab in the Technical University where the local organisers had hospitably provided a barrel of beer!

This was an excellent event from both the scientific and social perspectives. The organisation was smoothly and unobtrusively handled by an enthusiastic local team. Paper reviewing was processed promptly, with the organisers making effective use of the Internet. Moreover, the conference Chair Vasek Hlavac took the sensible decision of hiring a professional organiser, Eva Matyskova, to handle the day-to-day running of the event. All-in-all a highly successful conference.

Edwin Hancock,
University of York, United Kingdom

PS: The proceedings, edited by V. Hlavac and R. Sara (990 pages), are published by Springer-Verlag Heidelberg in the series Lecture Notes on Computer Science as Volume 970, ISBN 3-540-60268-2. The organizers have a few copies remaining for sale at a reduced price (DEM 110 airmail to Europe or surface mail outside Europe, and DEM 125 airmail outside Europe). Those interested should send an email to caip95@vision.felk.cvut.cz or send FAX to +42 2 290159.

CONFERENCE ANNOUNCEMENTS

IAPR Workshop on Document Analysis Systems
11-13 October 1996   Malvern, PA USA

An intensive, three-day, single-track, 100% participation workshop on the research and development of systems for the analysis of document images. Academic and industrial researchers, end-users and students are encouraged to attend.

Topics: descriptions of complete, working document image analysis systems, including applications to large document image databases; applications to text, graphics, maps, logic diagrams, music, etc. studies of system architectures; methods of performance evaluation; interfaces to knowledge databases and post-processors.

More information from: das@vfl.paramax.com and http://www.vfl.paramax.com/das/

Submissions to: Jonathan Hull, Ricoh California Research Center, 2882 Sand Hill Road, Suite 115, Menlo Park, CA 94025 USA

Deadline for paper submission	**1 April 1996**
Notification of acceptance	**15 June 1996**
Deadline for camera-ready copy	**1 July 1996**

Pattern Recognition in Practice V [IAPR]
4-6 June 1997   Vlieland, The Netherlands

This workshop will explore the relationship between pattern recognition, modern statistical methods, artificial intelligence and neural and other netwroks. Methodology as well as applications will be discussed.

Topics: Use of AI techniques in pattern recognition and image processing, probabilistic reasoning and graphical models, fuzzy logic, evolutionary computing, neural networks, comparative studies and hybrid systems.

Program committee: A.K. Jain, P.J. Smyth, W. Pedrycz, E.S. Gelsema, R.P.W. Duin, L.N. Kanal.

Attendance is limited to 70 persons. Extended abstracts to be sent to: PRP-V conference secretariat: Dept. of Medical Informatics, Erasmus University, P.O. Box 1738, 3000 DR Rotterdam, The Netherlands, tel: +31 10 4087050; fax: +31 10 4362882; e-mail: prp5@mi.fgg.eur.nl.

Deadline for abstract submission	**1 November 1996**
Notification of acceptance	**15 January 1997**
Deadline for camera-ready copy	**1 May 1997**

10th Nordic-Baltic Conference on Biomedical Engineering & 1st International Conference on Bioelectromagnetism
9–13 June 1996   Tampere, Finland

Submit a camera ready copy of a 2-page paper in the format described on the WWW page, preferebly electronically, to the address on page 11, by January 15th. However, late submissions will be considered and may be published in a late submissions volume separately.

Answer to question on p.7:
"The mountain NOT going to Mohamed!"

BMVC 96: Seventh British Machine Vision Conference
9–12 September 1996   Edinburgh, UK

Four copies of full papers not exceeding 10 pages (approx. 5000 words if no figures), three of which anonymous, should be submitted to the address on page 11, by April 29th. More information from:
FTP: peipa.essex.ac.uk in ipa/info/conferences/bmvc
WWW: http://peipa.essex.ac.uk (under BMVC96)

EUROPTO Satellite Remote Sensing III: Image and Signal Processing for Remote Sensing
23–27 September 1996   Taormina, Italy

Fax, or email four copies of an extended abstract (at least four pages) to the address on p11, by February 15th. Include a CV of main author and a cover page specifying the topic of the submission, which Remote Sensing problem the paper is addressing, what the message of the paper is in a nutshell and what Remote Sensing data are used to demonstrate the work.

3rd International Colloquium on Grammatical Inference (ICGI-96)
25–27 September 1996   Montpellier, France

Submit three copies of a full length paper (maximum 12 pages, 12pt font, including figures, tables, references, etc) to the address on page 11, by April 1st. More information on http://itkwww.kub.nl:2080/itk/Docs/Projects/Walter/icgi.html

Automatic Optical Inspection for Industry: Theory, Technology and Applications, Photonics China '96
4–7 November 1996   Beijing, China

Submit an abstract of 500 to 1000 words, by post to the address given on page 11 or electronically to abstracts@spie.org, or by fax to +1-360-647-1445 Specify on the top the conference for which it is intended. Also include a brief biography of principal author (50 to 100 words).

ICML'96: 13th International Conference on Machine Learning
3–6 July 1996   Bari, Italy

Submit 5 copies of a full paper, no more than 12 pages, plus title page and bibliography, (12 point, A4 paper, 40 lines per page) by January 21st to the address on page 11. The title page should iclude a summary of the main contributions of the paper.

18th Annual International Conference of the IEEE Engineering in Medicine and Biology Society
31 October to 3 November 1996   Amsterdam, The Netherlands

Two-page papers should be submitted by May 1st to the address on page 11, according to the istructions to authors that will become available on request from mid January.

FORTHCOMING CONFERENCES, WORKSHOPS AND EVENTS

1996	Event	Location	Contact
4–8 March GR-PR&IU	4-th Open German-Russian Workshop on Pattern Recognition and Image Understanding	Valday, Russia	H. Niemann, (Fax: +49-9131-691185) niemann@informatik.uni-erlangen.de I.B. Gourevitch (Fax: +7-095-129-0797) igourevi@nsk.rc.ac.ru
21–22 March RECPAD'96	8th Portuguese Conference on Pattern Recognition	Guimaraes, Portugal	RecPad'96, University of Minho, Azurem, 4800 Guimaraes, Portugal, recpad96@eng.uminho.pt
8–9 April SSIAI	IEEE Southwest Symposium on Image Analysis and Interpretation	San Antonio, Texas, U.S.A	Prof Scott Acton, School of Elec & Comp Engin, 202 Engineering South, Oklahoma State University, Stillwater, OK 74078 USA, http://www.ece.arizona.edu/conferences/swsymp96
14–18 April ECCV'96	Fourth European Conference on Computer Vision	Cambridge, UK	ECCV'96 Conference Secretariat, 42 Devonshire Road, Cambridge, CB1 2BL, UK. cc@confcon.demon.co.uk
19–20 April PCVA	Workshop on Performance Characteristics of Vision Algorithms	Cambridge, UK	Henrik Christensen, Laboratory of Image Analysis, Aalborg University, Fr Bajers Vej 7, Bldg D1, DK-9220 Aalborg OE, Denmark, hic@vision.auc.dk
6–9 May IASTED & SCS	Modelling, Simulation and Optimization	Gold Coast, Australia	IASTED Secretariat, MSO'96, 4500-16th Avenue NW, Unit 80, Calgary, Alberta, Canada T3B 0M6, Tel: +1-403-288-1195, Fax: +1-403-247-6851, iasted@istd.cuug.ab.ca, http://www.cuug.ab.ca:8001/ warwodad/iasted.html
19–24 May IS&T	IS&T's 49th Annual Conference	Minneapolis, USA	David W Tweeton, 3M Center, 210–3E–04 St Paul, Minneapolis 55144, USA, dwtweeton@mmm.com
21–23 May IWMIC-96	International Workshop on Medical Image Compression	Milano, Italy	Rosa Lancini, CEFRIEL Via Emanueli 1520126 Milano, Italy. Tel: +39 2 66100083, Fax: +39 2 66100448, rosa@mailer.cefriel.it
21–24 May VI'96	**Vision Interface'96**	**Toronto, Canada**	**Professor Wayne Davis, Department of Computer Science, University of Alberta, Edmonton, Canada T6G 2H1. davis@cs.ualberta.ca [IAPR]**
3–6 June ICNN	International Conference on Neural Networks	Washington DC, USA	Benjamin Wah, Coordinated Science Lab, Univ. of Illinois at Urbana-Champaign, Urbana, IL 61801, USA. Tel: +1-217-333-3516, Fax: +1-217-244-7175, icnn96@manip.crhc.uiuc.edu, http://www-ece.rice.edu/96icnn
9–13 June 10 NBCBME	10th Nordic-Baltic Conference on Biomedical Engineering & 1st International Conference on Bioelectromagnetism	Tampere, Finland	10th NBCBME & 1st ICBEM, Ragnar Granit Institute, Tampere University of Technol ogy, PO Box 692, FIN-33101, Finland, Tel: +358-31-3162524, Fax: +358-31-3162162, nbc@ee. tut.fi, http://www.ee.tut.fi/ nbc96
10–14 June EUROPTO	Productivity in Manufacturing: New Image Processing Techniques	Micropolis, Besancon, France	Laser, Optics and Vision for Productivity in manufacturing I c/o Direct communications GmbH, Xantener strasse 22, D - 10707 BERLIN, FRG, Tel: +49-30-881 50 47, Fax: +49-30-881 50 40/882 20 28, 100140,3216@CompuServe.com (Heckel)
16–20 June CVPR'96	Computer Vision & Pattern Recognition	San Francisco, USA	Katsushi Ikeuchi, Wean Hall 4212, Department, Carnegie Mellon University, Pittsburgh, PA 15213- 3891 USA, ki@cs.cmu.edu
25–27 June BIOSIGNAL '96	13th Biennial International Conference	Brno, Czech Republic	BIOSIGNAL'96 Conference, Department of Biomedical Engineering, Technical University of Brno, Purkynova 91a, 61200 Brno, Czech Republic, bs96@dbme.fee.vutbr.cz, http://www.fee.vutbr.cz/UBMI/BS96.html, gopher.fee.vutbr.cz
3–5 July 16th LASR	16th Leeds Annual Statistical Research Workshop: Image Fusion and Shape Variability	Leeds, UK	Dr Christine Gill, Department of Statistics, University of Leeds, Leeds, LS2 9JT, UK. workshop@amsta.leeds.ac.uk Tel: +44-113 2335157, Fax: +44 113 2335102, http://www.amsta.leeds.ac.uk

FORTHCOMING CONFERENCES, WORKSHOPS AND EVENTS

1996	Event	Location	Contact
3–6 July ICML'96	13th International Conference on Machine Learning	Bari, Italy	Jeff Schlimmer, School of Elec Eng & Comp Science, Washington State University, Pullman, WA 99164-2752, USA, icml96@di.unito.it, http://www.di.unito.it/pub/WWW/ICML96/home.html
25–30 Aug **13–ICPR**	**13th International Conference on Pattern Recognition**	**Vienna,** **Austria**	**c/o Austropa Interconvention, A–1043 Vienna, POB 30, Austria. icpr@prip.tuwien.ac.at** **http://www.prip.tuwien.ac.at/icpr/icpr.html [IAPR]**
2–3 Sept **TC7, TC8**	**IAPR Workshops on Remote Sensing & Applications in Industry**	**Graz,** **Austria**	**Axel Pinz, Technical University Graz, Institute for Computer Graphics, Muenzgrabenstrasse 11, A-8010 Graz, Austria, pinz@icg.tu-graz.ac.at, tu-graz.ac.at/workshops/IAPR/welcome.html**
9–12 Sept BMVC	British Machine Vision Conference	Edinburgh, UK	Mrs Judith Gordon, Department of Artificial Intelligence, University of Edinburgh, 5 Forrest Hill, Edinburgh EH1 2QL, UK Tel: +44 131 650 3094, Fax: +44 131 650 6899, BMVC96@aifh.ed.ac.uk, http://peipa.essex.ac.uk
10–13 Sept EUSIPCO	VIII European Signal Processing Coneference	Trieste, Italy	The Office, v.S Nicolo 14, 34121 Trieste, Italy. Fax: +39 40 368808
16–19 Sept ICIP–96	1996 International Conference on Image Processing	Lausanne, Switzerland	Pr. Henri Maitre, ICIP–96/Dept IMA, Ecole Nationale Superiure des telecommunications, 46 Rue Barrault, 75 634 Paris Cedex 13, France. auric@ltssg4.epfl.ch http://ltswww.epfl.ch
22–25 Sept VBC'96	Visualization in Biomedical Computing	Hamburg, Germany	IM DM, Dept of Comp Sc in Medicine, Univ Hospital Eppendorf, Pav 70, Martinistrasse 52, D-20246 Hamburg, Germany, Tel: +49-40-47173652, Fax: +49-40-47174882, vbc96@uke.uni-hamburg.de, http://www.uni-hamburg.de/ medizin/vbc96
23–27 Sept EUROPTO	Satellite Remote Sensing III	Taormina, Italy	Satellite Remote Sensing III EUROPTO, c/o Direct communications GmbH, Xantener strasse 22, D - 10707 BERLIN, FRG, Tel: +49-30-881 50 47, Fax: +49-30-881 50 40/882 20 28, Compuserve:100140,3216@CompuServe.com (Heckel)
25–27 Sept ICGI–96	3rd International Colloquium on Grammatical Inference	Montpellier, France	Laurent Miclet, IRISA-ENSSAT, BP 447 - 6, Rue de Krampont, 22305 LANNION Cedex FRANCE Tel: +33 96 46 66 28, Fax: +33 96 37 01 99, http://itkwww.kub.nl:2080/itk/Docs/Projects/Walter/icgi.html
14–16 Oct **DAS96**	**IAPR Workshop on Document Analysis Systems**	**Malvern,** **Pensylvania,** **USA**	**Suzanne Liebowitz Taylor, Loral Defense Systems-Eagan 70 E Swedesford Rd, Paoli, PA 19301-0517, USA das@vfl.paramax.com and http://www.vfl.paramax.com/das/**
31 Oct-3 Nov EMBS 96	18th Annual International Conference of IEEE Engineering in Medicine and Biology Society	Amsterdam, The Netherlands	Basics International Conference Services, University of Twente, Po Box 217, 7500 AE Enschede, The Netherlands, Fax: +31-53-4356770, embs96@basics.utwente.nl, http://uro01.azn.kun.nl:8000/embs96/
4–7 Nov AOII	Automated Optical Inspection for Industry: Theory, Technology and Applications	Beijing, China	IS&T/SPIE EI '96, SPIE, P O Box 10, Bellingham, WA 98227-0010, USA, Tel: +1-360-676-3290, fwu@watson.ibm.com
1997	Event	Location	Contact
4–6 June PRP–V	Pattern Recognition in Practice V	Vlieland, The Netherlands	Dept. of Medical Informatics,Erasmus University, P.O. Box 1738, 3000 DR Rotterdam, The Netherlands tel: +31 10 4087050; fax: +31 10 4362882; e-mail: prp5@mi.fgg.eur.nl

YEAR AT A GLANCE CONFERENCE PLANNER

Contact Addresses Pages: 10–11   Previous Reports are shown in Brackets (volume, number)
• = submission date   □ = final camera ready copy   numbers = actual meeting dates

Conference	Location	Jan	Feb	March	April	May	June	July	Aug	Sep	Oct	Nov	Dec
GR-PR&IU	Russia	•1		4–8									
ITC (v17n4)	Jerusalem	□15		18–21									
RECPAD'96 (v17n3)	Guimaraes		□2	21–22									
SSIAI	San Antonio		□2		8–9								
EMCSR 1996 (v17n3)	Vienna				9–12								
Workshop (v17n4)	Cambridge				13–14								
ECCV'96 (v17n2)	Cambridge	□20			14–18								
PCVA	Cambridge			□15	19–20								
NeuroFuzzy (v17n4)	Prague		□19		16–18								
IASTED & SCS	Australia	•1		□15		6–9							
OEAGM (v17n4)	Leibnitz		•15			□9–10							
IS&T	Minneapolis		□19			19–24							
GKPO'96 (v17n4)	Machocice					20–24							
IWMIC-96	Milano					21–23							
VI'96 (v17n3)	Toronto			□15		21–24							
ICNN	Washington		□23				3–6						
S/CAR'96 (v17n4)	Denver						6–9						
NBCBME	Tampere	•15					9–13						
EUROPTO	Micropolis					□13	10–14						
CVPR'96	San Francisco						16–20						
BIOSIGNAL'96	Brno				□15		25–27						
LASR	Leeds					□1		3–5					
ICML'96	Bari	•21			□6			3–6					
ISPRS'96 (v17n4)	Vienna							9–19					
SSPR'96 (v17n3)	Leipzig					□20			20–23				
13-ICPR	Vienna	•15			□15				25–30				
TC7,TC8	Graz	•31								2–3			
5 IWFHR (v17n3)	Colchester				□20					2–5			
TIPMOR (v17n4)	Florence									5–6			
BMVC	Edinburgh				•29			□8		9–12			
EUSIPCO	Trieste				□30					10–13			
ICIP'96	Lausanne	•8				□31				16–19			
VBC'96	Hamburg		•15							22–25			
EUROPTO	Taormina								□30	23–27			
ICGI-96	Montpellier				•1			□15		25–27			
ICEVS'96 (v17n4)	Rodos				•1				□1		13–16		
DAS96	Pennsylvania				•1				□15		14–16		
SMC (v17n3)	Beijing	•15					□1				14–17		
EMBS96	Amsterdam					•1					31–	3	
AOII	China				•9				□13			4–7	

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