IAPR

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

NEWSLETTER

Editor
Josef Kittler
Dept. Electronic and Electrical Engineering,
University of Surrey,
Guildford GU2 5XH,
UK.
Telephone: (44 483 509294)
kittler@uk.ac.surrey.ee

FROM THE EDITOR'S DESK

Working on this eight page issue of the Newsletter on the Boxing Day made me realise that it is probably about the right time for me to hand over the responsibilities for editing the IAPR Newsletter to an enthusiast for the IAPR cause with fewer commitments than myself. So if there are any able and willing bodies among the fifteen thousand on the circulation list this is the time to come forward. Any offers of help will be gladly received either by Prof Martin Levine or myself.

With the festive season freshly on my mind please allow me to take this opportunity to wish you a productive and happy year 1990 and a very good start to the new decade.

The Editor

Contents

News Copy Deadlines

Last date for editorial copy:
Volume 13 Number 1   20 February 1990
Volume 13 Number 2   20 May 1990

Circulation: 14900 copies

NEWS IN BRIEF

IAPR REPRESENTATIVE TO IFIP Dr Pierre Devijver, the past president of IAPR has become the IAPR Representative to the International Federation for Information Processing. He has succeeded Prof Herbert Freeman who served in this office since 1976 when IAPR became IFIP's first Affiliate Member.

NEW JOURNALS

Journal of Visual Communication and Image Representation

Academic Press

Scope

With the growing availability of fiber links, advances in large-scale integration, new telecommunication services, VLSI based circuits, and computational systems, as well as the rapid advances in vision research and image understanding, the field of visual communication and image representation will continue to grow. The new journal will combine reports on the state-of-the-art of visual communication and image representation with emphasis on novel technologies and theoretical work in this multidisciplinary area of pure and applied research. The journal will consist of regular papers and research reports describing either original research results or novel technologies. The field of visual communication and image representation is considered in its broadest sense and covers both digital and analog aspects as well as processing and communication in biological visual systems.

Editors-in-Chief

Yehoshua Y Zeevi
Technion-Israel Institute of Technology
Haifa, Israel
and
CAIP Center, Rutgers University
Piscataway, New Jersey, USA

T Russell Hsing
Bell Communications Research
Morristown
New Jersey, USA

Submission of Manuscripts

Journal of Visual Communication and
Image Representation
Editorial Office
Seventh Floor
1250 Sixth Avenue
San Diego
California 92101
USA

Journal of Visual Languages and Computing

Academic Press

Scope

The journal publishes research papers, surveys and review articles in the areas of visual languages, visual programming, pictorial databases, human vision systems and models, parallel, distributed and neural computing and respesentation of visual information, and advanced applications in a number of diverse areas.

Editors

Prof S K Chang
Department of Computer Science
University of Pittsburgh
Pittsburgh
PA 15260
USA

Prof Stefano Levialdi
Dept di Matematica
Universita di Roma
Piazzale Aldo Moro 2
00185 Rome
Italy

Submission of Papers

Manuscripts should be addressed to one of the Editors.

CONFERENCE REPORTS

3rd INTERNATIONAL CONFERENCE ON AUTOMATIC IMAGE PROCESSING: CAIP 89

Leipzig, GDR - September 8-10, 1989

The third of a series of international conferences on automatic image processing (CAIP 89), organized by the Scientific-Technological Society for Measurement and Automatic Control of the German Democratic Republic (DDR), took place in Leipzig from 8 to 10 September 1989. (The first and second of this series took place in 1985 in East Berlin and in 1987 in Wismar). Most of the participants were from Eastern Europe, including, for the first time, a large number from the Soviet Union. Out of the nearly 300 participants, I may have been the only native speaker of English; yet all the papers were

presented and published in the conference proceedings in English - further testimony to the continuing establishment of English as the international language of science and commerce.

The conference included two levels of presentations: posters and papers. The Proceedings were published in two volumes: one for posters and papers, the second for papers selected for a special issue of Mathematical Research , published by Akademie-Verlag Berlin. Fifty posters and seventy-four papers were presented.

The countries represented at this conference were Bulgaria, Czechoslavakia, Egypt, Federal Republic of Germany, German Democratic Republic, Greece, Hungary, Italy, Poland, Portugal, Romania, Soviet Union, United Kingdom, Switzerland and United States. The conference organizers would like to see more participation from Western Europe and North America in future conferences (the next one will be held in 1991).

The subject matter discussed in the technical sessions ranged over basic theory, applications, software, and hardware. A small technical exhibition was presented during the conference.

One aspect of this conference which I particularly enjoyed was that all of the sessions were held in the same lecture hall - there were no parallel sessions. This gave me a chance to listen to a wide range of topics without missing papers among my several areas of interest. This benefit was possible because of the small size of the conference.

Most of the papers were written and presented by scientists and engineers in Eastern Europe.

For additional information on this conference and on the next conference in this series, CAIP 91, write to

Dr Rheinhard Klette
    Academy of Sciences
    Central Institute of Cybernetics and Information Processes
    Department of Artificial Intelligence
    DDR - 1086 Berlin
    Kurstr 33
    German Democratic Republic

Jack Sklansky

University of Irvine, California

IEEE INTERNATIONAL CONFERENCE ON IMAGE PROCESSING

Singapor - September 7-8, 1989

The IEEE International Conference on Image Processing was held in Singapore on 7 and 8 September. It was organised by the IEEE Singapore section (computer chapter) and the department of Engineering, National University of Singapore.

On 5 and 6 September, two days prior to the conference, tutorial sessions on image processing were given by four speakers. On the first day Prof Thomas Huang from the Coordinated Science Lab, University of Illinois, gave a talk entitled "Computer Vision and Dynamic Scence Analysis." He talked about various computer vision applications in inspection, quality control, analyzing and understanding 3-D and possibly time varying scenes as well as some matching techniques used in object recognition. He also described some techniques used in motion detection, spatial-temporal reasoning and model-based image sequence compression. At the same time Prof Bruce Batchelor, UWCC, Cardiff, UK, talked about machine vision systems for inspection and robot control, he also talked about lighting and image acquisition techniques, optics and image sensors. On the second day Dr Rolf-Juregen Ahlers, IPA, Stuttgart, covered areas such as algorithmic fundamentals, techniques for processing monochrome and binary images and design aids. He also gave examples of some case studies. In parallel Dr Frederick Walts from 3M Company in the USA gave a tutorial on the hardware-based processing systems. He talked about high speed vision architectures, with examples and also trends in hardware development.

On 7 September Prof Takeo Kanade, School of Computer Science, Carnegie Mellon University, USA, opened the conference with a very interesting keynote talk entitled "Computer vision as a physical science." He asserted that traditionally, computer vision algorithms had been based on heuristics often obtained by biological analogy or introspection but now he proposed the development of physical models for computer vision. His approach results in algorithms which are more powerful, quantitative and revealing than the traditional ad hoc methods based entirely on heuristic knowledge. He also developed the idea of using geometric and physical models to automatically generate vision algorithms for object identification etc. He further demonstrated and discussed the use of colour understanding, extremely narrow baseline stereo using 3-D object recognition examples.

During the two days of the conference 4 - 6 parallel sessions were held each day. They included areas such as biomedical image processing, computer graphics, image coding, feature extraction, image registration, artificial intelligence techniques, pattern recognition, edge detection etc . Of all the sessions, the biomedical image processing sessions were of particular interest to me with subjects ranging from automatic diagnosis, area detection, image reconstruction and colour coding etc. In

total there were 400 delegates from the Far East, Europe, Canada, USA and Australia etc and 160 papers were presented.

During the conference there was an exhibition of the latest products and systems related to image processing. A 9-course conference banquet was held on the first night of the conference. The delicious meal consisted of seafoods, chicken and various vegetable dishes all served with tea. The conference and tutorial days were very good and made the long trip well worth the effort.

Margaret Varga
RSRE, Malvern

5th INTERNATIONAL CONFERENCE ON IMAGE ANALYSIS AND PROCESSING

Positano, Italy - September 20-22, 1989

I have a pleasure to include two reports on the above conference. The first has been provided by the Chairman of the Conference Programme Committee, Dr Gabriella Sanniti di Baja. It gives a very useful factual information about the conference. The second report, invited by the Editor, gives the impressions the conference made on one of the participants, Dr Edwin Hancock.

First Report

The 5th International Conference on Image Analysis and Processing (5ICIAP) was held in Positano, Italy. It was organized by the Istituto di Cibernetica del CNR, the Dipartimento di Informatica e Sistemistica dell'Universita' di Napoli and the IAPR Italian Chapter. The Conference Chairman was Gabriella Sanniti di Baja. Vice Chairman was Stefano Levialdi. The Scientific Chairman and the Program Chairman were Luigi Cordella and Virginio Cantoni, respectively. An inestimable help in the organization was generously offered by Carlo Arcelli, and a financial contribution was given by some sponsoring institutions and firms.

Since the first Conference in this series in Pavia in 1980, a lot of effort has been made by the Italian Community of researchers in Pattern Recognition to improve the technical quality of the conference and to gain a prominent position among the International Conferences organized by other countries in the same field. Approximately 160 papers have been submitted for possible presentation from researchers coming from 21 countries. The papers have been carefully reviewed by the members of the Scientific Committee with the help of other reviewers who devoted much time to recommend papers for the conference.

About 120 papers have been selected. They have been partially discussed during twelve sessions spread out over three days, and partially presented in the Poster Session. Both theoretical and applicative aspects of Image Processing have been discussed. Areas covered by research papers include: Image Segmentation, Representation, Description and Recognition, 3-D Vision, Parallel Algorithms and Architectures, IP Systems and Applications.

Dr Sanniti di Baja opening the 5ICIAP

Moreover, six invited lectures have been given by well-known experts. Namely, Robert Duin, Herbert Freeman, George Nagy, Denis Rutovitz, Hanan Samet and Piero Zamperoni.

The proceedings book, the title of which is "Progress in Image Analysis and Processing" will be published by World Scientific Publishing Co Pte Ltd. The expected publication date is March 1990.

A social program was also organized for both delegates and accompanying persons. It included a Welcome Cocktail, a Get-Together Party, a half-day excursion to the Excavations in Pompei, a Gala Dinner and a Surprise Party (which although organized at the last minute, was successfull). The weather has been fine during the conference days and the participants enjoyed, besides the scientific program, the social program and the admirable blend of human artifacts and unspoiled nature of Positano.

The 6th ICIAP will take place in Como, Italy in September 1991.

Gabriella Sanniti di Baja
Istituto di Cibernetica del CNR

Second Report

This conference took place in Positano which is about 50 kilometers south of Naples. The town of Positano is impressive. It clings perilously to the almost vertical mountains which form the Amalfi coast. The conference venue was the Hotel Le Agavi which is situated hundreds of metres above the centre of the town and the bulk of the hotel accommodation. To succesfully navigate from town-centre to conference venue required a good head for heights. Positano is not recomended to vertigo sufferers.

The conference was attended by just over one hundred delegates. Although the bulk of these were from Italy, the meeting attracted good attendance from elsewhere in Europe plus some delegates from America and Japan. The relatively small size of the conference made for an atmosphere which I found highly conducive to informal technical discussions with other delegates. This atmosphere was further stimulated by the relaxed surroundings and enjoyable social programme.

The technical programme was spread over three days. Each day commenced with two talks by invited speakers. Of the six invited lectures I particularly enjoyed those given by H Samet(Maryland) on Spatial Datastructures and by D Rutovitz (MRC, Edinburgh) on Two Dimensional Image Analysis.

Following the invited lectures, there were parallel sessions consisting of shorter (20 minutes) technical presentations. These talks had a wide topical coverage. The session headings included Applications, Formal Approaches to Algorthms, Image Segmentation, Image Processing Systems and Architectures, Shape Analysis, Object Recognition, Motion and, finally, Depth. The quality of the presented material was generally high and there were a good number of very interesting talks. I certainly look forward to the publication of the proceedings book to find out some more details. For me the high points of this part of the programme were provided by some quite stimulating talks in the sessions on segmentation and object-recognition.

In addition to the formal presentations, there was a two-hour poster session. This was a useful and time-efficient way of giving coverage to a large number of interesting papers. Almost fifty such papers were presented in this way. Unfortunately, the poster area was very confined and poorly ventilated.

In addition to the technical programme, there were some very enjoyable social events. These included several get-together parties, a half day excursion to visit the remains at Pompei and a ten course conference banquet. With all this activity confined to the brief period of time,

I did find my stamina flaging when we had only reached course-seven of the banquet at midnight.

Overall the meeting was both a technical and an organisational success. Congratulations to the organisers for putting together such a succesful conference in such a fine venue,

Edwin Hancock
Rutherford Appleton Laboratory

5TH ALVEY VISION CONFERENCE

Reading, UK - September 25-27, 1989

This was the fifth Alvey Vision Conference. The conference was originally established as a forum for vision researchers funded under the UK's Alvey advanced information technology programme. It has become by tradition the annual gathering of a relatively close-knit section of the UK vision commmunuity. This years attendence of over a hundred and fifty delegates, drawn mainly from UK universities and research institutes, largely reflected this tradition.

The high-points were provided by the two invited speakers. Joe Mundy (University of Oxford and General Electric) gave a provocative opening talk which reviewed progress in computer vision since the pioneering work of Roberts in the mid-sixties. Harry Barrow (University of Sussex) gave a very informative overview of some the physiological evidence that underpins the connectionist approach to vision. Both talks stimulated some lively questions.

The main programme consisted of a single stream of short (20 minute) presentations. In terms of bandwidth, the topical coverage was large. It encompassed most aspects of vision from low-level image processing to higher-level scene understanding. For instance, there were sessions devoted to Texture, Feature Extraction, Shape Extraction, Shape Representation, Object Tracking, and Model-Based Vision. However, the breadth of the conference should not be judged form the list of topics covered alone. As well as the traditional vision methodologies, there were talks on emerging areas such as active vision and neural networks.

An innovation in this year's programme was the addition of a poster session. Although relatively small (11 papers), this proved to be an interesting adjunct to the main programme. My personal preference would be to see more papers presented in this way, reserving more of the main programme for longer presentations of especially high quality work. There were two talks outside

the main programme. Patric Van Hove from the European Commision reviewed the opportunities for vision in the forthcoming ESPRIT-II call for proposals. In a more light-hearted mood, the invited speaker at the conference dinner treated delegates to an insight into some of the product-planning strategies of the IBM Corporation.

I have attended two previous conferences in this series. In my opinion this was technically the best so far. In the past the greater part of the programme has been specifically devoted to progress on Alvey-funded work. This conference was more diverse. There was a considerable body of fresh work being reported. This partly reflects the fact that the Alvey programme is now over and researchers are having to look further afield for funding. However, I think it also reflects the fact that the meeting itself is growing in stature and becoming less perochial.

The organisers are to be congratulated on putting together a high-quality technical programme. Although this is the last in the Alvey-Vision series, the conference will be continued under the auspices of the newly established British Machine Vision Association.

Edwin Hancock
Rutherford Appleton Laboratory

CALLS FOR PAPERS

IAPR TC7 WORKSHOP ON MULTISOURCE DATA INTEGRATION IN REMOTE SENSING

University of Maryland, USA - June 14-15, 1990

Program

The workshop organised by the International Association for Pattern Recognition's Technical Committee 7 (Applications in Remote Sensing) is co-sponsored by the NASA Goddard Space Flight Center. The programme will consist of invited and submitted papers in the following areas:

- Remote sensing data source and their characteristics
- Integrative methods for across sensor data registration
- Gathering, validating and registering of ground reference data
- Development of multisource data sets
- The utilization of multi-source data sets in Earth Science applications

Deadlines

Feb 1, 1990	Paper summary (4 copies)
April 1, 1990	Authors notified
June 14, 1990	Camera-ready manuscript

Submission

Dr James C Tilton
    Mail Code 636
    NASA Goddard Space Flight Center
    MD 20771
    USA
    Fax: (301) 286-3221
    Email: tilton@chrpisis.gsfc.nasa.gov

VISUAL COMMUNICATIONS AND IMAGE PROCESSING 90

Lausanne, Switzerland - October 2-4, 1990

Program

This annual conference will address the state-of-the-art and new developments in the area of digital image processing as related to visual communications. Original and unpublished contributions are invited in the areas of:

- Digital image processing and coding
- Video communications
- Mathematical morphology and fractals
- Digital image processing in medicine
- VLSI implementation and architectures

Deadlines

Feb 5, 1990	Abstract (1000 words, 4 copies)
May 7, 1990	Authors notified
July 9, 1990	Camera-ready manuscript

Paper Submission

SPIE Technical Program Committee/Lausane 90
    PO Box 10
    Bellingham
    WA 98277-0010
    USA

1990 IEEE WORKSHOP ON VISUAL LANGUAGES

Skokie, Illinois, USA - October 4-6, 1990

Program

The theme of the workshop is visual information retrieval, visual reasoning and knowledge representation. Both theoretical issues as well as design/ implementation issues will be explored. Papers are solicited in the following areas:

- visual languages
- visual communication
- pictorial databases
- biological vision systems and models
- parallel/distributed/neural computing & representations for visual information processing

Deadlines

April 1, 1990   Full papers (4 copies)

Paper Submission

Prof S K Chang
Department of Computer Science
University of Pittsburgh
Pittsburgh
PA 15260
USA

3rd INTERNATIONAL CONFERENCE ON COMPUTER VISION

Osaka, Japan - December 4-7, 1990

Program

The program will consist of high quality contributed papers on all aspects of computer vision. All papers will be refereed by the members of the Program Committee. Accepted papers will be presented as long papers in a single track or as short papers in two parallel tracks.

Deadlines

April 30, 1990   Full papers (4 copies)
July 15, 1990   Authors notified
August 15, 1990   Camera-ready manuscript

Information for Contributors

Papers must contain major new research contributions. All papers will be reviewed using a double-blind procedure, implying that the identities of the authors will not be known to the reviewers. To make this possible, two title pages should be included, but only one containing the names and addresses of the authors; the title page with the names and addresses of the authors will be removed prior to the review process. Both title pages should contain the title of the paper and a short (less than 200 words) abstract. Authors must restrict the lengths of their papers to 30 pages; that length should include everything, meaning the title pages, texts (double-spaced), figures, bibliography, etc.

Paper Submission

Saburo Tsuji
Department of Control Engineering
Osaka University
Toyonaka
Osaka 560
Japan

IAPR WORKSHOP ON MACHINE VISION AND APPLICATIONS

Tokyo, Japan - November 28-30, 1990

Program

The workshop, which will be held one week before the IEEE 3rd International Conference on Computer Vision (Osaka), is sponsored by the IAPR Technical Committees 6, 8 and 10. The workshop will address the following topics:

- Architectures for machine vision
- Neural networks
- Industrial applications
- Document, map and line drawing processing

Deadlines

June 30, 1990   Paper summary (400 words, 4 copies)
July 30, 1990   Authors notified
Sept 30, 1990   Camera-ready manuscript

Submission

Prof Mikio Tagaki
Institute of Industrial Science
University of Tokyo
7-22-1 Roppongi, Minatoku
Tokyo 106
Japan
Fax:+81-3-423-2834
Email: takagi@tkl.iis.u-tokyo.ac.jp

CALENDAR OF EVENTS

Date	Event	Location	Sponsor/Information
March 6-8,1990	Neural Networks: Biological Computers or Electrical Brains	Lyon, France	AFCET, Conference Department, 156 Boulevard Péreire, 75017 Paris, France
April 15-19, 1990	Artificial Intelligence - Industrial Applications	Leningrad, USSR	Prof V M Ponomaryov, Leningrad Institute for Informatics and Automation of the USSR Academy of Sciences, 39, 14th Line, Leningrad, 199178 USSR

Date	Conference	Location	Contact
April 23-25, 1990	1st European Conference on Computer Vision	Antibes, France	Madame C Juncker, INRIA, Bureau des Relations Exterieures, 2004, route des Lucioles, 06565 Valbonne Cedex, France
May 5, 1990	1990 Gulf digital Signal Processing Symposium	Kuwait	1990 GDSPS Secretariat, Faculty of Technologocal Studies, P.O. Box 42325, 70654 Shuwaikh, Kuwait
May 28 - June 1, 1990	Expert Systems and Their Applications	Avignon, France	Jean-Claude Rault, EC2, 269-287, rue de la Garenne, 92024 Nanterre Cedex, France
June 13-15, 1990	IAPR Workshop on Syntactic and Structural Pattern Recognition	Murray Hill, New Jersey, USA	Dr Henry S Baird, AT&T Bell Laboratories, Rm 2C-557, 600 Mountain Avenue, Murray Hill, NJ 07974, USA
June 14-15, 1990	IAPR TC7 Workshop on Multi-source Data Integration in Remote Sensing	University of Maryland, USA	Dr James C Tilton, Mail Code 636, NASA Goddard Space Flight Center, Greenbelt, MD 20771, USA
June 17-21,1990	10th International Conference on Pattern Recognition	Bally's Hotel, Atlantic City, NJ, USA	10th International Conference on Pattern Recognition, c/o Conference Department, IEEE Computer Society, 1730 Massachusetts Avenue, N.W., Washington, DC 20036-1903, USA
July 2-6, 1990	3rd International Conference on Information Processing and Management of Uncertainty in Knowledge-Based Systems	Paris, France	Secretariat de la Conférence IPMU, ENSTA, 32 Boulevard Victor, 75015 Paris, France
July 9-13, 1990	International Neural Network Conference	Paris, France	Nina Thellier, NTC INNC0-90-PARIS, 19, rue de la Tour, 75116 Paris, France
September 17-20, 1990	Applied Optics and Opto-Electronics	Nottingham, UK	Applied Optics and Opto-Electronics, Applied Optics Group, Blackett Laboratory, Imperial College, London SW7 2BZ
September 18-21, 1990	5th European Signal Processing Conference	Barcelona, Spain	EUSIPCO-90, Dept Teoria de la Senal y Comunicaciones, ETSITB - UPC, Apdo 30002, 08080 Barcelona, Spain
September 19-22, 1990	4th International Conference on Artificial Intelligence	Varna, Bulgaria	Dr Christo Dichev, AIMSA 90, ITKR - Bulgarian Academy of Sciences, Bl. 29 A, Acad. G Bonchev St., 1113 Sofia, Bulgaria
October 2-4, 1990	Visual Communications and Image Processing 90	Lausanne, Switzerland	SPIE, PO Box 10, Bellingham, WA 98227-0010, USA
October 4-6, 1990	1990 IEEE Workshop on Visual Languages	Skokie, Illinois, USA	Prof S K Chang, Department of Computer Science, University of Pittsburgh, PA 15260, USA
October 22-26, 1990	International Conference on Signal Processing 1990	Beijing, China	Prof Yuan Baozong, Research Institute of Information Science, Northern Jiaotong University, Beijing 100044, China
October 29-31, 1990	Remote Sensing: An Operational Technology for the Mining and Petroleum Industries	London, UK	The Conference Office, The Institute of Mining and Metallurgy, 44 Portland Place, London W1N 4BR, UK
November 6-9, 1990	International Symposium on the Intergration of photogrammetry and remote sensing into GIS: Use and Quality	Strasbourg, France	Alsace Congress, 20, rue du Jeu des Enfants, 67000 Strasbourg, France