## CHAIRMANS MESSAGE.

The British Machine Vision Association (BMVA) and Society for Pattern Recognition was launched on 1st January 1990, merging the interests of the BPRA and the Alvey Vision Club. Although the formalities are still being completed, the new association is fully operational and a number of interesting meetings have been planned. The most prominent of these is the first British Machine Vision Conference, BMVC, which will take place in Oxford between 25-27 September 1990, continuing the tradition of the very successful series of AVC conferences. This will be the major UK machine vision event of 1990 and everyone is encouraged to offer contributions so that the highest standards can be maintained. Other planned developments are longer one day meetings, additional regional chapters and new information services. Ideas concerning other new activities or meetings would be much appreciated and gladly recieved - the general idea being to make the association both accessible and useful to its members. It is expected that members of both the BPRA and the Alvey Vision club will find that they get even more out of the BMVA. In addition, it is hoped that those who were not members of either organisation, might consider joining the new association so that it can develop into a truly representative national forum for all those who are active in machine vision and pattern recognition.

Prof. Chris Taylor
University of Manchester

## EDITORS MESSAGE

Welcome to the first edition of BMVA News. This is the quarterly news-sheet/magazine of the BMVA. It is intended to contain details of future events within the association as well as interesting contributed articles about any aspect of vision and/or pattern recognition. It will include reports of meetings and conferences, reviews of new books, details of funding initiatives and job opportunities as well as any other useful material that will amuse or inform the average reader who is, for example, sitting in front of their workstation waiting for their favorite "real-time" job to finish. Of course, some of the above aims are best achieved by my including material which *you* will find interesting and the best way to ensure this is for *you* to send me contributions. So, if you have an incurable desire for immortal literary fame or are just a frustrated cub reporter with a good idea then please contact me at any of the addresses in the newsletter banner. I hope that BMVA News will have a bright and lively future!

As well as this newsletter there are several other important sources of news or information which the well-informed BMVA member should have at their fingertips (sometimes quite literally!). Firstly the IAPR Newsletter. You have no doubt already discovered that this is provided courtesy of your BMVA subscription. In addition, there are two e-mail bulletin board services which provide useful fori (is this really the plural of forum?) for informal news and discussion. The first is a U.S. based vision list which can be obtained by sending a subscription request to Vision-List@ADS.COM. The second e-mail list is called PIXEL and is provided weekly by Adrian Clark at Essex University. PIXEL is officially endorsed by the BMVA and urgent news items which might fall between BMVA News deadlines will be announced in PIXEL. All members are advised to subscribe by sending a mail message to pixel-request@uk.ac.essex.

Finally, a couple of administrative points. Firstly, with the increasing availability of computer networks many members may like to receive this newsletter via e-mail. Could such persons please send me an email message and I shall arrange this. Secondly, in order to ensure the smooth running of newsletter production and distribution I intend to normally enforce deadlines for the submission of material. BMVA News should appear in February, May, August and November and therefore the deadline for the submission of material for the May 1990 newsletter is 30 April 1990.

Editor

## BMVA MEETINGS

The new BMVA Committee is busy arranging a full and lively programme of meetings for the coming year. The first of these will be on $2^{nd}$ May 1990 in London and is entitled "Mechanisms for the direction of attention in human and machine vision." It will be a full-day meeting in conjunction with the Applied Vision Association. It is hoped that it will provide a useful forum for discussion between the human and machine vision communities and may spark fruitful collaboration. More details concerning the venue and registration costs will be circulated as they become available.

## BMVC 90

As mentioned above, the first BMVA conference will be held in Oxford between 25-27 September. A call for papers has already been circulated with a deadline for receipt of 6 A4 pages by 7 May. The registration cost to BMVA members will be less than for non-members to encourage subscription to the association. Robert Series of RSRE (email: series@uk.mod.rsre) is handling registration arrangements while Andrew Zissermann at Oxford (email: az@uk.ac.ox.robots) is coordinating the programme. As with previous Alvey conferences, prizes will be offered for the two best papers and a selection of papers will appear in a special edition of Image and Vision Computing.

## CHAPTER NEWS

The vigorous success of the two regional organisations in the old BPRA has ensured that the North of England Chapter and Scotland Chapter have been retained within the structure of the new BMVA. The original motivation for their establishment was, presumably, their large geographical distance from London and the consequent difficulties and cost in regularly attending London BPRA meetings. However, it has become apparent that in addition to this, the development of a more local organisational structure can have more profound consequences. A more local organisation brings a greater number of people into the activities of the association and can lead to more informal and effective interaction between members. The operations of the regional chapters tends to complement rather than detract from the the central activities and they can be more easily targeted at areas of particularly local relevence. The question of a London Chapter has already been broached in BMVA committee and is at the stage where the committee would welcome comment from individual members. So, if you have any opinions or suggestions about regional organisations (their desirability, their location, how they might be structured etc) then please send them to me at BMVA News and they will be input into the committees discussions.

### North of England Chapter

Future technical meetings are plannned for the following dates: Thursday March 8th, WEDNESDAY April 11th, Thursday May 10th, Thursday June 14th and Thursday July 12th. The first meeting on 8th March will be a talk by Dr V Howard, Dept. of Anatomy and Cell Biology at the University of Liverpool and is entitled "3-D Measurements from Microscope Images". Other meetings will concern the use of "Colour Information in Image Interpretation" and a talk on "Euclidean Distance Transforms", by Denis Rutovitz of the MRC Human Genetics Unit at the Western General Hospital in Edinburgh.

## PUBLIC SOFTWARE

Adrian Clark, who runs the PIXEL e-mail newsletter, has recently instigated an archive for material related to image processing. It will contain public-domain or freely-available software, specifications of file formats, contents lists for popular journals in the field and, as soon as enough disc space is acquired, actual imagery. He has already collected together a number of software packages including Phill Everson's excellent ALV toolkit, his own library of fortran routines and several items from North America. He is keen to know of and/or recieve any suggestions or additional material. The archive will shortly be fronted by a mail-server but at the moment possible subscribers should first contact Adrian at the University of Essex. Tel: 0206-872432 or email: alien@uk.ac.essex.ese.

## STANDARDS

At a recent meeting of BSI IST/31 (the committee that considers computer graphics), a series of votes was taken to rank priorities for UK graphics standards work for the period up to April 1991. In those votes, I was the only one in favour of a proposed project in the area of imaging: as a result, imaging came third from bottom. (The ones that came lower still were *real* joke projects!) IST/31 has a very tight schedule, anyway, and others were voting against imaging on the combination of that problem and the shortage of expertise in the committee. The effect is likely to be that, once an international (ISO/IEC) project is defined, the UK will vote 'no participation'. This *could* mean that the project will fail, which would delay a possible international standard by several years. Or it *could* mean that an international standard would go ahead without any UK expert input; in the fullness of time, the complete standard would become part of the European Community standards programme, and *could* thereby become mandatory on procurements in the UK. I would therefore love to reverse the committee's ranking of imaging. Is there a possibility of imaging experts (other than the two already on the committee) joining BSI IST/31? People who might like to join may contact me at the address below.

Robin Fairbairns
Laser-Scan Ltd., Cambridge
Tel:0223 420414, email: rf@cl.cam.ac.uk

## AVC90 PRIZE PAPERS.

The AVC committe have selected the following papers to receive the cash prizes for the best papers at the most recent AVC conference:

- Prize for Best Scientific Contribution
        (sponsored by the AVC committee)
    "Tracking Objects Using Image Disparities"
        by A J Bray, The University of Sussex.

This paper reported work which combined in a novel way several techniques from model-based vision and optic flow to track a polyhedral object through a sequence of images. The system initially established a match between the image and the internal model, and then used this knowledge to track the object through 3-d movements into the next frame. If tracking failed, then the system could re-establish the object's location by a reduced form of the initial matching process. In the opinion of the committee, the work was outstanding: it was both of topical scientific interest and was presented clearly.

- Prize for Greatest Industrial Potential
    (sponsored by Computer Recognition Systems Ltd)
        "A Dynamic Combinatorial Hough Transform
            for Straight Lines and Circles"
        by V F Leavers, D Ben-Tzvi & M B Sanders,
                King's College London.

This paper was judged by the committee to make a significant advance on existing Hough techniques, offering greatly improved efficiency in both processing time and the need for accumulator space. It detailed a means for treating the pattern parameters separately, and for providing a feedback mechanism to detect maxima. The Hough transform is often used in industrial classification tasks, and improvements to its efficiency were considered by the committee to be of important potential benefit to industry.

Jeff Sullivan
Reading University

## ECCV 90

The Programme Committee of the First European Conference on Computer Vision met in Paris just before Christmas, selected the papers for presentation at the meeting and drew up a preliminary programme. As usual, selecting the papers for presentation was a long and difficult job (the Committee Meeting began at 9.00 am and did not close until almost 8.00 pm!). 212 papers were submitted with many coming from the USA and elsewhere outside Europe. The overall quality was very high and each was circulated to three members of the Programme Committee responsible for their review. Competition was thus extremely tough, but the Committee decided to stay, for the most part, with the idea of having a single track conference. However, by including long and short papers (approximately 35 long and 30 short), and by accepting approximately a further 20 papers for presentation as posters, the Committee, under the guidance of the Conference Chairman, Oliver Faugeras, have managed to accommodate over 60 papers in the programme.

The topics covered are quite diverse but, as may have been noticeable at the AVC Meeting last September, motion and tracking continue to be popular topics. This, I think, reflects the large amount of research currently devoted to the development of real-time, continuously operative vision systems for applications in surveillance or to the control of AGV's. In addition, shape and shape description are also popular topics, again reflecting research efforts to increase the generality and scope of the images and scenes that can be handled.

Final versions of the accepted papers should now have been sent to the Conference Co-ordinator, Thérèse Bricheteau▮ at INRIA, Le Chesnay (the deadline was 25 January) and will be published in the Conference Proceedings by Springer Verlag. Proceedings will be distributed to participants at the meeting. In addition, a selection of the best papers presented at the meeting will also be published as a special issue of Image and Vision Computing under the editorship of Professor K D Baker.

In order to accommodate all these papers and retain as far as possible a single track meeting, the Conference has been slightly extended. It will now commence after lunch (registration at ~13.00) on Monday 23 April and close at tea (~16.00) on Thursday 26 April. Registration forms etc are now being prepared and will be circulated by the second week of February. For further details, members should contact the Conference Secretariat, Madame C Juncker, Bureau des Relations Exterieures, INRIA - Sophia Antipolis, 2004 route des Lucioles, 06565 Valbonne, Cedex, France (FAX: +33 93 65 7765, Telex: 970050 F).

The Conference will now be straddled by the ESPRIT and BRA Workshops that had originally been planned to follow it. The ESPRIT Workshop will be held on Monday, 23 April, and the BRA (Basic Research Actions) meeting will take place on Friday, 27 April. Attendance at these meetings will be limited but members interested should contact Dr P van Hove, Room 515, Building A25, Commission of the European Communities, 25 rue Archimede, B-1049, Brussels, Belgium (this address is faster than the one given in the last newsletter) or on Eurokom or e-mail: (Patrick_Vanhove_CEC_DGXIII@euro tel: +32 2 236 0322.

Finally, the enthusiastic response to the call for the First ECCV indicates that there will almost certainly be a Second ECCV etc, as workers in Europe now begin to come together to share new ideas and results just as we in the UK did some five years ago under Alvey. The question of the Second ECCV, its timing, location, etc has thus already been raised within the Programme Committee and it is hoped that an announcement can be made at the first meeting - probably at the banquet to be held on the Wednesday evening.

Bernard Buxton
GEC Hirst Research Centre

## ICCV

The Third International Conference in Computer Vision is to be held between $4^{th}$-$7^{th}$ December in Osaka, Japan. The format will be long papers in a single track as well as short papers which will be presented in two parallel sessions. Papers should not exceed 30 pages. Four copies should be sent to Saburo Tsuji, Osaka University, Dept of Control Engineering, Toyonaka, Osaka 560, Japan (email: tsuji@tsuji.ce.osaka-u.ac.jp) by 30 April 1990. Authors will be notified of acceptance by mid-July and final camera-ready papers are needed by mid-August.

## NEURAL NETWORKS

The British Neural Network Society is holding "Neural Computing Meeting 90" at the Queen Elizabeth Hall, Kensington, London between 18-20 April. The three day meeting is structured so that the first day largely consists of tutorials, the second is contributed papers and the final day includes a series of guest speakers. Further details can be obtained from Dr C.L.T. Mannion, Dept of Electronic and Electrical Engineering, University of Surrey, Guildford. Tel 0483 571281 ext 2304 or e-mail conal@uk.ac.surrey.cs.

## I.P. SYSTEMS

A commercial conference entitled "Implementing Image Processing Systems: Strategies and solutions." is to be held 21-22 March 1990 at the Queen Elizabeth II Conference Centre, London. It is organised by Blenheim Online and will consist of two tracks with presentations emphasising *practical strategies* and cost-effective *solutions.* The cost of registration is £545 + VAT. Further details can be obtained from Sue Day at Blenheim Online by ringing 01-868 4466.

## TRANSPUTER CONFERENCE

The SERC/DTI Transputer Initiative is holding the second of a series of conferences on "Transputer Applications" between 11-13 July 1990 at Southampton University. The call for papers includes applications relating to Image Processing and Pattern Recognition. Three copies of an extended 4 page abstract should be submitted before $9^{th}$ March. Authors will be advised of refereeing decisions by $10^{th}$ April and camera ready copy has to be submitted by $11^{th}$ May. Multi-transputer applications will be given more emphasis by referees than single-transputer applications. Further details can be obtained from Yvonne Flynn, TA90 Conference Administrator, Transputer Technology Solutions, 2 Venture Road, Chilworth Research Centre, Southampton SO1 7NP, tel +44 703 760834, Fax +44 703 760833 or e-mail: ta90@uk.ac.soton.tts.

## MACHINE VISION COURSE

A four-day course in Machine Vision for Industrial Automation will be held from $2^{nd}$-$5^{th}$ April 1990 at Leicester Polytechnic. The course will cover Image Sensing, Machine Vision Methodology, Machine Pattern Recognition, Machine Vision Systems, Survey of Commercially Available Equipment and several Case Studies. Each participant will recieve course notes and a copy of the book "Vision and Information Processing for Automation." written by two of the course lecturers: A. Browne and L. Norton-Wayne. The residential cost of the course is £535. Further details and application forms can be obtained from Mr Ian Cairns, Marketing Unit, Leicester Polytechnic, PO Box 143, Leicester LE1 9BH, Tel 0533 549972.

## IEE ACTIVITIES

The IEE, Institute of Electrical Engineers, is organising several one day colloquia on topics in the vision or image processing area. These include:

- "The role of image processing in defense and military applications." sometime during April 1990.

- "Recent Developments in Image Processing: Applications in Remote Sensing." on Friday 6th April 1990.

- "Low bit rate image coding." on 11 May 1990.

- "Electronic images and image processing in Security and Forensic Science" on 22nd May 1990.

These meetings consist of contributed papers from IEE members. The venue is the IEE Headquarters at Savoy Place in London and there is usually a registration charge of about £20-30. Further details of calls for contributions or application forms for attendance can be obtained by contacting the IEE directly.

## SITUATIONS VACANT

### Reading University

N.E.R.C. Unit for Thematic Information Systems, NUTIS, at the University of Reading have a three year Research Fellowship associated with a project entitled "The Application of Geographic Information Systems for Monitoring and Modelling Land Cover and Use in the United Kingdom.". The project involves the design and development of algorithms for the extraction of information from remotely sensed images, utilising auxiliary information relating to landscape. Applications are particularly welcome from people with a computer vision background. Further details can be obtained from Dr Jeff Settle, tel 0734 318741, or by contacting the Personnel Office at the University of Reading, tel 0734 318741.

### Keele University

Applications are invited for a 3-year appointment as a post-doctoral research fellow to work on a project to investigate early visual form processing. This will entail

a mixture of computational modelling and psychophysical experiment. Candidates should preferably be experienced in computational vision research, but those with training in computing science, physics, experimental psychology, and allied disciplines are also encouraged to apply. The appointment, available immediately, will be on the Research IA scale, initially up to Point 5, depending on age and experience. Informal enquiries and applications with CV and the names of two referees to Prof David H. Foster, Department of Communication & Neuroscience, University of Keele, Keele, Staffordshire ST5 5BG, England (Tel. 0782 621111, Ext 3247; e-mail D.H.Foster@uk.ac.keele).

## DIARY

**2 March 1990** AVA Meeting on "Modelling in Vision", London

**21-22 March 1990** Implementing Image processing Systems, Blenheim Online. London.

**2-5 April 1990** "Machine Vision for Industrial Automation", Leicester Polytechnic.

**6 April 1990** IEE Colloquim on "Applications in Remote Sensing", Savoy Place, London.

**18-20 April 1990** Neural Computing Meeting 90, London.

**23-25 April 1990** ECCV, Antibes, France.

**2 May 1990** Joint BMVA/AVA meeting on "Direction of attention in human and machine vision.", London.

**7 May 1990** Deadline for submission of BMVC papers.

**11 May 1990** IEE Colloquim on "Low bit rate image coding", Savoy Place, London.

**22 May 1990** IEE Colloquim on "Electronic images and image processing in security and forensic science", Savoy Place, London.

**17-21 June 1990** 10th International Conference on Pattern Recognition, Atlantic City, U.S.A.

**9-13 July 1990** International Neural Network Conference, Paris.

**11-13 July 1990** SERC/DTI Transputer Applications Meeting, Southampton.

**29 July - 18 August 1990** SUSSP on Pattern Recognition and Image Processing in Physics, St Andrews, Scotland.

**3-6 September 1990** AVA Visual Search Conference, Durham.

**25-27 September 1990** BMVA Conference, Oxford.

**4-7 December 1990** ICCV, Osaka, Japan.