

# BMVA News

The Newsletter of the British Machine Vision Association and  
Society for Pattern Recognition

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**Editor:** Professor Roy Davies  
Department of Physics  
Royal Holloway, University of London  
Egham, Surrey, TW20 0EX  
Tel: +44(0)1784 443497  
Fax: +44(0)1784 472794  
email: e.r.davies@rhul.ac.uk

<http://www.bmva.ac.uk/>

**BMVA** News<sup>1</sup> is published every three months. Contributions on any activity related to machine vision or pattern recognition are eagerly sought. These could include reports on technical activities such as conferences, workshops or other meetings. Items of timely or topical interest are also particularly welcome; these might include details of funding initiatives, programmatic reports from ongoing projects and standards activities. Items for the next edition should reach the editor by 1 March 2008.

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## Editorial: *Is Lena a Forgery?*

In the study of antiques and ancient works of art, authenticity is the *sine qua non*, because of the huge value placed on such articles in the open market. In this context the term ‘provenance’ is of crucial importance – namely the documentary or other evidence accompanying a work ‘proving’ usually via a known sequence of ownership that it is the genuine thing. But how is this relevant in our own context? Well, over the past year I have had to compare a number of imaging algorithms – and what better pictures to use than Lena, House, F-16 Airplane, Peppers, and so on? Unfortunately, I kept on getting contradictory results, different from those of other workers to the extent that even the intensity histograms differed markedly in some cases: Lena was particularly problematic.

Of course, one can understand this in a way: people hand images on to others, send them by email, even within documents, and sometimes maybe doctor them, innocently forgetting what they have done: converting from .bmp to .jpg to .tif or whatever; changing size; trimming; enhancing; and converting to different colour representations. The reason for deliberate change would typically be so that shadows can be seen more clearly, if that is what a particular worker is interested in. Anyway, the result is that by obtaining images from the web one

doesn't know for sure what one is getting – the 'pig in a poke' situation.

The solution is to improve provenance by declaring that some websites are more authentic than others, and in this respect it seemed that the USC site (<http://sipi.usc.edu/database>) containing 'Miscellaneous' images (including the four mentioned above) was perhaps the most reputable: at least it says something about the origins and dates of the various images. And thus one would have to have good reason not to use the USC versions of images – though unfortunately this set is all too few in number. It is also limited in the resolutions available, and some are grey rather than colour (though of course the original images might have been grey anyway). Hence if one wants  $256 \times 256$  rather than  $512 \times 512$  pixel images one will have to resample; and here it is surely necessary to quote the resampling algorithm (bicubic or whatever). In our case provenance has to mean not only the original source but also the subsequent processing sequence.

Going back to Lena, I also found I was getting odd streaks (one relatively prominent) in my processed images, near the top right. Incredibly, it is there in the USC original, so maybe their original isn't authentic. But let us not rush to conclusions that could be unjustified. Think back on the origins of Lena as a portion of a picture that appeared in Playboy magazine aeons ago. The copy of Playboy happened to be in an IP laboratory and someone had the bright idea of using Lena as a test image (both appealing and conveniently there in the laboratory at that moment – recall Fleming discovering Penicillin, or Archimedes in his bath). Unfortunately this copy of Playboy had been scratched slightly by a coffee cup being pushed across it (my conjecture). But in the IP community that is the image we inherited, so the scratch is what to us makes it authentic. Indeed, it now acts as a sort of watermark usefully showing we have a *non*-forged version of the image. In fact, maybe such an artefact gives our algorithms a useful extra test: was our edge detector or Laplacian able to locate that scratch?

This leads one to wonder whether test images should all have different facets which will push our algorithms in several ways at once, so that their capabilities will be stretched. Thus we need faces containing eyes that reflect the scenes they observe, text appearing on curved hoardings in outdoor scenes, cameo appearances à la Hitchcock, etc.

On another tack, it is exactly one year since I reported on the launch of the HOSDB<sup>2</sup> i-LIDS<sup>3</sup> video library,

aimed at giving academics and other vision practitioners realistic crime-orientated scenarios for testing their algorithms. High amongst its aims was the need to include the 'all hours–all weathers' concept in the sets of videos – literally covering the weather for a whole calendar year (which is one aspect that makes the videos rigorous and worthy of useful work in the field, rather than sterile laboratory curiosities). At the 12 December 2007 BMVA Symposium on Security and Surveillance (see back page of this issue for pictures) Paul Hosmer of HOSDB gave a noteworthy talk about the use of the video library. So in just one year, a lot of use has been made of it, and it is gratifying that the HO emphasis has been able to change from production to use and to consideration of serious methods for testing effectiveness of algorithms and for comparing them. Particularly ROC analysis (True versus False Positives) and the slightly less well known F-measure were promoted for demonstrating success in tracking and at the same time for discriminating against erroneous interpretations. Other speakers followed these lines, showing how they had actually incorporated such ideas in their own surveillance work (though not necessarily using i-LIDS). However, James Ferryman emphasised that temporal accuracy is also of importance: after all in video, we shouldn't be thinking only about success with individual frames, but about how long it takes to lock on to a new, perhaps small or noisy, moving object.

I was a bit worried however, by the fact that infra-red imagery wasn't considered too useful or realistic. Infra-red camera capabilities have blossomed over the past 5 years or so – from very small  $\sim 16 \times 16$  pixel images to substantial  $\sim 640 \times 480$ . Admittedly, the cost is high, and in the £15K bracket – or even far more for some types which have been motivated by military and medical applications. However, technology is well known to advance in sizeable steps, and if one believes as I do that Moore's law applies in this area too, it will not be 5 years before the whole scenario regarding resolution and cost does become realistic. Then we really will be able to live up to the i-LIDS 'all hours–all weathers' motivator.

Taking all this into account, I can't see Machine Vision stagnating for quite some time. And at some point in the not too distant future, cameras and computers will be so powerful that our lack of AI capability and software prowess will be the aspect that hasn't matched hardware advancement. Which means that we will be under greater pressure than ever before.

Professor Roy Davies  
Editor, BMVA News  
email: [e.r.davies@rhul.ac.uk](mailto:e.r.davies@rhul.ac.uk)

<sup>2</sup>Home Office Scientific Development Branch

<sup>3</sup>Imagery Library for Intelligent Detection Systems

## Report on ICCV 2007

I attended the 11<sup>th</sup> ICCV held in Rio de Janeiro, Brazil from 14 to 20 October. This year is the 20<sup>th</sup> anniversary of ICCV since 1987 and the conference introduced a new two-phase review process and two new awards, the ‘Azriel Rosenfeld Life-Time Achievement Award’ for a senior researcher who has made consistently outstanding contributions in the field of computer vision and the ‘Significant Researcher Award’ for a researcher whose research theme has had a very significant following and impact in computer vision and various related fields.

The first two days are quite busy for me to catch up with interesting talks in various tutorials and workshops. The main conference opened on 16 October, starting with a learning session, where Caetano *et al.* proposed a learning method to speed up graph matching while maintaining accuracy. Vedaldi *et al.* presented a boosting algorithm for supervised learning that incorporates invariance to data transformations with high generalisation capabilities.

In object detection, Xiao *et al.* presented a dynamic cascade for face detection and a large training data set was released for download (detailed below). Pham *et al.* proposed an approach to rapidly train and select Haar features for face detection so that training time can be significantly reduced. Huang *et al.* showed how a boosted face detector can be trained incrementally. Wu presented a cluster boosted tree for multi-view, multi-pose object detection. Work on recognition included a model to represent and learn generic 3D object categories, presented by Savarese and Li; a biologically inspired system for action recognition presented by H Jhuang *et al.*; shape descriptors for maximally stable extremal regions proposed by Forssen and Low; and improved SIFT for fast tree matching using optimal linear projection by Mikolajczyk and Matas.

In segmentation and tracking, N Ahuja and S Todorovic presented a way to extract ‘texels’ in 2.1D natural textures. Y Yacoob and L Davis used meta-texture saliency for segmentation. Lee and Elgammal modelled view and posture manifolds for tracking. Salzmann *et al.* proposed a convex optimization for deformable surface 3D Tracking. Joshi *et al.* introduced a multi-camera based ‘synthetic aperture’ for tracking objects through occlusions. Zhao *et al.* proposed a differential earth mover’s distance for tracking. Zhang *et al.* presented a graph-based discriminative learning method for object tracking.

In reconstruction and registration, Alldrin and Kriegman introduced a stratified photometric stereo method to reconstruct the shape of a surface with an arbitrary,

spatially varying isotropic bidirectional reflectance distribution function (BRDF). Morris and Kutulakos presented a new method to reconstruct the exterior surface of a complex transparent scene with inhomogeneous interior. Gay-Bellile *et al.* proposed a framework to explicitly model self-occlusions to address the issue of self-occlusions in non-rigid registration. Huang *et al.* proposed a new approach to registration of moving dynamic textures.

During breaks, the ‘Azriel Rosenfeld Life-Time Achievement Award’ was presented to Professor Kanade of CMU and the ‘Significant Researcher Award’ to Professor Terzopoulos of UCLA. They also gave retrospective talks on their work, which were quite interesting and well received. The Marr Prize was awarded to BC Davis, PT Fletcher, E Bullitt and S Joshi for their paper “Population shape regression from random design data”. The Honourable Mentions went to YN Wu, Z Si, C Fleming and SC Zhu for the paper “Deformable template as active basis”, A Ghosh, S Achutha and W Heidrich and M O’ Toole for the paper “BRDF acquisition with basis illumination”, M Chandraker, S Agarwal, D Kriegman, S Belongie for the paper “Globally optimal affine and metric upgrades in stratified autocalibration”. In a later bidding for ICCV 2011, Barcelona edged out unlucky Sydney and the bidding process was very amusing.

There are also some interesting papers on graph cuts, optical flow, stereo and SFM, etc. and I found two new datasets released in the conference maybe useful. One is a very large dataset containing around 80,000 face samples for face detection, which will be available at <http://mmlab.ie.cuhk.edu.hk/>. The other is a database and evaluation methodology for optical flow available at <http://vision.middlebury.edu/flow/>. Also exhibited was a Philips 3D display with WoWvx technology which gave participants amazing 3D viewing experience during breaks. As Rio is a very scenic city, there was a lot that could be explored during the conference – the beach, sugarloaf and Christ the Redeemer, interspersed with favelas!

That’s just a glimpse of the conference: I’d like to convey my thanks to the BMVA and Centre for Vision, Speech and Signal Processing, University of Surrey for funding the trip.

Yonggang Jin  
University of Surrey  
email: y.jin@surrey.ac.uk

## Report on MICCAI 2007

The 10<sup>th</sup> International Conference on Medical Image Computing and Computer Assisted Intervention (MICCAI 2007) was held in Brisbane, Australia this year from 29 October to 2 November. The aim of MICCAI is to bring the world's scientists, engineers, clinicians and researchers from different disciplines together under one roof to discuss the current issues in medical imaging and how to tackle them with the aid of current computer technologies, as it is vital to automate as many medical processes as possible in order to save valuable time and human resources in modern-day society.

Satellite events were included in this year's MICCAI, including six workshops and four tutorials, presented on the days adjacent to the main conference. I presented my paper, entitled "An Implementation of the Scale Invariant Feature Transform in the 2.5D Domain" at the Workshop on Content-based Image Retrieval for Biomedical Image Archives: Achievements, Problems, and Prospects. The main objective of this workshop was to introduce CBIR in medical images and discuss the key issues in this field. During the afternoon, I attended one of the tutorials organised by Professor Ela Claridge in which the issues of Multispectral imaging in medicine were discussed.

The conference commenced on Tuesday morning with a dance ceremony as part of the Traditional Welcome. The motivation behind the design of the MICCAI 2007 logo was revealed during the Traditional Welcome – it is of a snake in the shape of the Brisbane River, the river that runs along Brisbane, the conference's host city. The conference included a total of nine oral sessions covering 38 papers and 18 poster sessions covering 199 papers in the course of three days, covering a wide span of topics relating to medical imaging presented by scientists all over the world. Shortly after the Traditional Welcome, the oral sessions began with "Diffusion Tensor Imaging and Computing", followed by "Cardiac Imaging and Robotics" before the lunch break. Perhaps because of the long distances all the delegates had travelled for the conference, and the consequent jetlag, questions were sparse during the first oral session. However, individual and group discussion came to life during the poster session in the afternoon, followed by the "Image Segmentation and Classification" oral session. The day ended with the "Image Guided Intervention and Robotics" oral session. It was a full and long day with lots of interesting research from different fields of medical imaging, and it was interesting to talk to other people about their research ideas which seemed completely and utterly different from my own.

Wednesday kicked off with an oral session "Physiology and Physics-based Image Computing" followed by the first keynote given by Professor Peter Hunter from University of Auckland, entitled "Cardiac Modelling and the Physiome Project – from ion channels and protein pathways to integrative cells, tissues and organ function". He discussed the current challenges of multi-scale modelling. Even though some of the materials were far beyond my own research, I found the talk extremely fascinating. The day was continued with equally interesting topics, including "Brain Atlas Computing" and "Simulation of Therapy" for the oral sessions and six poster sessions. The Banquet dinner was held that evening at the Brisbane Conference Centre with the opportunity to meet other researchers from different countries. Entertainment was provided throughout the evening and every delegate enjoyed the Banquet.

The final day of the conference consisted of two more oral sessions, "Spectroscopic and Cellular Imaging" and "Spatio-Temporal Registration" and also Professor Stuart Crozier's keynote on "High Field MRI – potential and pitfalls for new tissue contrast". The remaining posters were presented in the poster sessions. The day was once again filled with lots of interesting and well presented research ideas. The conference ended with the traditional football match – though as I am not a football fanatic myself, I opted out and joined some of the delegates for coffee to discuss our research ideas further.

On the Friday, I attended one of the workshops on "Interaction in Medical Image Analysis and Visualization" in which the trade-off between the need of automating the medical process and accuracy was discussed.

I thoroughly enjoyed the conference – especially the opportunity of meeting other international researchers and exchanging ideas with them. It was an extremely well organised conference and everybody who attended enjoyed every part of it. I would like to take this opportunity to thank the BMVA for their generous funding and making my trip to MICCAI 2007 possible. It has given me a wonderful opportunity to attend this phenomenal and outstanding conference.

Tsz-Wai Rachel Lo  
University of Glasgow  
email: rachel@dcs.gla.ac.uk

## Another view of MICCAI 2007

The 10<sup>th</sup> International Conference on Medical Imaging and Computer Assisted Intervention (MICCAI) took place in Brisbane, Australia between 29 October and 2 November 2007; the first and the last days of the conference were devoted to workshops and tutorials. Image-Guided Interventions (organisers: Kevin Cleary, Gabor Fichtinger, and Terry Peters), Advances in Diffusion MRI Analysis: Fundamental computational research driven by relevant biological questions (organisers: Carl-Fredrik Westin, Guido Gerig, and Ragini Verma), and Multispectral Imaging in Medicine (organiser: Ela Claridge) took place on 29 October and Medical Augmented Reality: state of art, basic technologies and future challenges (Organisers: Nassir Navab, Tobias Sielhorst, Joerg Traub, Marco Feuerstein, and Sandro Heining) on 2 November.

The impressive Brisbane Conventions and Exhibition Centre was chosen as the conference venue. A record number of papers (637) was submitted from 35 countries and 6 continents. Among them 237 papers were accepted (38 for oral and 199 for poster presentation). The conference was dominated by computer scientists and mathematicians; however, a number of clinicians were presented in the audience as well. This gave an opportunity for interesting discussions during the sessions and coffee breaks.

MICCAI provides a forum for the whole range of medical imaging problems. It runs as a single-track conference and the time was subdivided into General Medical Image Computing, Computer Assisted Intervention Systems and Robotics, Visualisation and Interaction, General Biological and Neuroscience Image Computing, Computational Anatomy, Computational Physiology and Innovative Clinical and Biological Applications sessions. Individual presentations were short (15 minutes followed by 5 minutes of questions) and characterised by high quality delivery. The posters were displayed at the beginning of the conference and advertised by means of e-teasers rather than 1-minute oral presentations (the usual practice at MICCAI). E-teasers, which were one slice poster descriptions, were displayed on several plasma screens inside the conference hall. This innovative solution to poster advertising proved to be highly efficient and allowed organisers to increase the number of floor presentations.

Two invited talks were given by Peter Hunter, FRS (Professor of Engineering Science, Director Bioengineering Institute, University of Auckland, New Zealand) and Stuart Crozier, (Professorial Fellow and Director of Biomedical Engineering at The University of Queensland Australian Research Council). The first, entitled “Cardiac Modelling and the Physiome Project:

from ion channels and protein pathways to integrative cell, tissue and organ function”, described the Union of Physiological Sciences (IUPS) Physiome Project. The aim of this ambitious project is to develop a public domain open-source framework for computational physiology and create an infrastructure for linking information about human body organisation; this would include models, standards, computational tools and web-accessible databases that would allow one to deal with gene regulatory networks, protein pathways and interactions, integrative cell function, tissue and whole heart structure-function relations.

In the second talk “High Field MRI – potential and pitfalls for new tissue contrast” – Professor Crozier gave an overview of the potential of high field Magnetic Resonance Imaging (MRI) for improved use of automated diagnosis, outlined problems associated with the use of high field equipment, and discussed the ways towards understanding and solving these issues.

This Jubilee MICCAI was a great success and it is difficult to single out one particular topic for special mention. This year a large number of authors addressed issues associated with modelling of the motion and structure of the human heart, registration of brain and interpretation of the data acquired from patients suffering from breast and prostate cancer. One theme which surfaced more than once was evaluation of robotic devices and machine vision systems for surgery and clinical diagnosis against ability of human operators. Whilst it might be said that today, transfer of machine vision systems in everyday clinical environment is still a long way away, many researchers have shown the potential of such an approach and its future benefits.

The conferences awarded several ‘MICCAI Young Scientist Awards’ prizes for papers presented by PhD students and the 2006 MedIA-MICCAI Prize, which went to T Vercauteren, first author of “Mosaicing of Confocal Microscopic *In Vivo* Soft Tissue Video Sequences” with (A Perchant, X Pennec, G Malandain and N Ayache). This year MICCAI gave a number of Conference Student Travel Stipends for student authors who attended the conference.

Our sincere congratulations to the MICCAI community on its tenth year anniversary and to the organisers of the conference, who delivered a thorough and interesting scientific program and a highly successful dinner. Details of MICCAI 2007, including information on next year (New York) and availability of this year’s proceedings are at <http://www.miccai2007.org/>.

Olga Kubassova  
University of Leeds  
email: [olga@comp.leeds.ac.uk](mailto:olga@comp.leeds.ac.uk)

## Theory and Practice of Computer Graphics 2008

University of Manchester, UK  
9–11 June 2008

The 26<sup>th</sup> Conference organised by the UK Chapter of the Eurographics Society will be the 6<sup>th</sup> Theory and Practice of Computer Graphics Conference (TPCG 2008). The conference website is:

<http://www.eguk.org.uk/TPCG08>

Paper Submission Deadline: 10 March 2008.

Papers are to be published by Eurographics.

The conference focuses on theoretical and practical aspects of Computer Graphics, bringing together top practitioners, users and researchers to inspire further collaboration – particularly between academia and industry.

Dr John Collomosse  
University of Bath  
email: [john.collomosse@gmail.com](mailto:john.collomosse@gmail.com)

## 3D Video – Analysis, Display and Applications

1-Day BMVA Symposium, Wednesday 6 February 2008, British Computer Society, 5 Southampton Street, London, WC2E 7HA, UK.

### Chairs

Dr David Marshall (Cardiff University), Professor Adrian Hilton (Surrey University), Professor Stephen Richmond (Cardiff University), Professor Bob Fisher (Edinburgh University)

- 10.00 Registration and coffee
- 10.20 Welcome and Introduction
- 10.30 Invited Talk: *3D face reconstruction from monocular or stereo images*, Thomas Vetter (University of Basel)
- 11.10 Session 1: 3D Video Analysis & Representation.  
*The use of 3D motion analysis to assess facial change as a result of surgical intervention*, S Richmond and H Popat (Cardiff University)  
*Devising a Mark-up Language for Dynamic Surfaces*, T Lukins and B Fisher (Edinburgh University)

*Towards Efficient 3D Facial Appearance Models*, K Sidorov, D Marshall and S Richmond (Cardiff University)

*Automatic Quasi-Isometric Surface Recovery and Registration from 4D Range Data*, T Collins and B Fisher (Edinburgh University) Adrien Bartoli (Clermont Ferrand University)

- 12.10 Poster Session Demo and Lunch  
Demo: Dimensional Imaging Limited.
- 13.30 Invited Talk: *Visual Computing between Physics and Perception*, Markus Magnor (Braunschweig Technical University)
- 14.10 Session 2: Face Animation.  
*3D Video Face Capture and Registration*, JD Edge, A Hilton and N Nadtoka (Surrey University)  
*3D Head Modeling Pipeline for Realistic Facial Expression Animation*, L Benedikt, V Kajic, D Cosker, PL Rosin and D Marshall (Cardiff University)  
*Towards Human-Realistic Facial Animation by Studying Human Dynamics*, D Cosker (Bath University)  
*Reading Emotion in Faces and Realistic Animation*, M Matthews and Jolyon Webb (Blitz Games)
- 15.10 Tea and Coffee and Posters
- 15.40 Invited Talk: *A Psychophysical Perspective on 3D: Computer Graphics Meets Perception*, Christian Wallraven (Max Planck Institute)
- 16.40 Session 3: 3D TV.  
*A Review of 3D Display Technology*, I Grimstead and N Avis (Cardiff University)  
*3D Video for the production of visual effects and interactive media*, O Grau (BBC Research & Innovation)  
*iview – Free-Viewpoint Video for Sports*, J Kilner, J-Y Guillemaut, J Starck, A Hilton (Surrey University) and O Grau (BBC R & I)  
*Multiview 3D Displays: Image Generation Requirements*, D Hassaine, N Holliman and S Liversedge (Durham University)
- 17.20 Closing remarks and finish

### Posters

*A Model-Based Approach for Coding Sequences*, L Granai, T Vlachos, JR Tena, T Davies (Surrey University)  
*Statistical Shape Model*, W Quan, B Matuszewski, L Shark, D Ait-Boudaoud. (University of Central Lancashire)  
*Compressed Video Sensing*, Iddo Drori (Tel Aviv University)  
*Automated 3D Tracking of Low Light Level Imagery using Poisson MAP-MRF Labelling*, H Gribben,

P Miller, H Wang, D Crookes, and D McCaughey  
(Queen's University Belfast)

*Spatio-temporal 3D Gait Recognition*, R Seely, J Carter  
and M Nixon (Southampton University)

*A Novel Tele-Presence System for Distributed  
Collaborative Engineering*, D Ferreira-Coelho and  
T Fernando (Salford University)

*View Scalable, Low Delay Random Access Approaches  
for Multiview Video + Depth Map Coding Systems*,  
Erhan Ekmekcioglu (Surrey University)

Note that a registration sheet is included with this issue  
of BMVA News so that members can book a place and  
lunch at the meeting.

Dr David Marshall  
Cardiff University  
email: dave.marshall@cs.cf.ac.uk

## Report on BMVA meeting on Shape Representation

5 November usually sees us entertained with explosions  
of colour and burning effigies, and this year was no  
exception for the BMVA with a well put together  
program of impressive graphical demonstrations and  
healthy scientific grillings.

The symposium on Shape Representation, Analysis and  
Perception, held at University College London,  
provided an excellent taster of how segmentation,  
visualisation, classification and tracking are currently  
benefiting from our understanding of shape.

Invited speaker Daniel Cremers (Bonn University)  
kicked off with a well received overview of how shape  
priors can rescue failing segmentation algorithms. His  
segmented rabbit showed that rotation and occlusion are  
no match for a well chosen shape model.

Having whetted our appetites for shape analysis, Daniel  
was followed by fine examples from shape manifolds  
and active contours to Procrustes methods from a self-  
confessed statistician.

The shape symposium ended with an interesting talk on  
the closely related topic of symmetry, and hopefully left  
us all with a better understanding of the ins (medial  
scaffolds) and outs (propagating surfaces) of shape  
models.

The BMVA wishes to thank all participants, in  
particular the speakers who came all the way from

Cranfield, Warwick, Bristol, Leeds, Surrey, Sheffield  
and London. Special thanks to Daniel Cremers, along  
with chairs Edwin Hancock and Will Smith (York  
University), for making this a successful symposium,  
and allowing us to discuss a wide range of ideas in such  
a short time.

Tony Shepherd  
UCL  
email: t.shepherd@cs.ucl.ac.uk

## IET Research Lists

One of the roles of the BMVA is to represent research  
activities in this area to industrialists and grant bodies.  
To this end, members of the Executive Committee often  
attend industrial events in order to showcase research.  
We have developed a set of posters for this purpose, and  
also advertise the BMVC. You may have seen us at  
IPOT (Image Processing and Optical Technology),  
which is held at the NEC each year in February.

Recently we have been approached by the IET *Visual  
Information Engineering* (VIE) Professional Network,  
with a view to more directly informing industry of the  
UK's research activities. The main idea to give  
industrialists the opportunity to find out about the  
interests of academics, with a view to future link-up.  
We have therefore begun to compile a list of established  
research groups who have members in the BMVA. This  
is being constructed based upon publicly available  
information, such as web pages. The information (web  
pages and email addresses) is to be passed on to the IET,  
in the first instance, but also to be distributed at  
industrial fairs.

While constructing the list we are trying to be inclusive,  
but it is always possible that we may miss someone. If  
you wish your group's research activities to be  
represented on the IET list you can send an email to  
neil.thacker@manchester.ac.uk, including a contact  
person, email address, web-page and a short list of  
research topics.

In future these will be distributed on your behalf during  
the course of BMVA activities.

Dr Neil Thacker  
University of Manchester  
email: neil.thacker@manchester.ac.uk



## Medical Image Understanding and Analysis

First Call for Papers  
MIUA 2008, Dundee, UK, 2–3 July

Chairs: Stephen McKenna and Jesse Hoey

MIUA 2008 is the twelfth in a series of annual meetings. MIUA is the principal UK forum for communicating research progress in image analysis applied to medicine and the biological sciences. This is an area notable for the range of research communities involved, and the meeting aims to encourage the growth and raise the profile of this multi-disciplinary field by bringing together these various communities. Contributions from outside the UK are also welcome and encouraged. The scope of the meeting extends from analysis of medical and biological images to imaging physics and clinical studies.

**Technical papers** (5 pages) are solicited on any topic within the scope of the conference. Each paper will be evaluated by three reviewers.

**Challenge abstracts** (1 page) are also solicited. These should outline a challenge to the image analysis community from a clinical or end-user perspective.

MIUA 2008 is a single-track conference with oral and poster presentations. All accepted contributions will be published and the full proceedings will be available to delegates at the conference. Selected papers are also likely to be published in the on-line journal *Annals of the BMVA*. In addition to contributed papers, MIUA will include tutorial and keynote presentations by invited speakers. CPD accreditation is being sought from relevant organisations.

Dundee is situated on the Tay Estuary on the east coast of Scotland. London is 75 minutes away by local flight, and international connections are readily available from Edinburgh, Glasgow and Aberdeen airports. Dundee is on the East Coast and Cross Country train lines.

Further details can be found at: <http://www.miua.org.uk>. Please register with the website to ensure you are kept up to date with conference information.

### Important Dates

Deadline for submissions: 14 March 2008  
Notification of acceptance: 6 May 2008  
Deadline for camera-ready copy: 20 May 2008  
Conference: 2–3 July 2008

### Steering Committee

E Claridge, University of Birmingham  
W Crum, Institute of Psychiatry, London  
J Graham, University of Manchester  
S McKenna, University of Dundee  
M Mirmehdi, University of Bristol  
D Rueckert, Imperial College London  
N Thacker, University of Manchester  
R Zwiggelaar, University of Wales, Aberystwyth

Dr Stephen McKenna  
University of Dundee  
email: [stephen@computing.dundee.ac.uk](mailto:stephen@computing.dundee.ac.uk)

### Forthcoming BMVA Technical Meetings

There has recently been a surge of activity in organising BMVA Technical Meetings, as you will see from the list below. While the dates of some of the later ones will clearly be tentative, the organisers are to be congratulated in getting together such a set of topical titles. The programme for the first of these has now been finalised (see page 6 of this issue for details), and the next few are already at the 'Call for Papers' stage.

6 Feb 2008	Three Dimensional Video
26 Mar 2008	Student Papers Meeting
16 Apr 2008	Retinal Image Processing
14 May 2008	Vision and Robotics
6 June 2008	Intelligent Environments/Smart Homes
29 Oct 2008	Learning in Vision
11 Nov 2008	Imaging Tissue Regions and Anatomical Structures in Medical Data
21 Jan 2009	Image Statistics

Please keep your eye on the BMVA website for further details and any updates. (Note that occasionally the most successful meetings are forced to change venue at the last minute to accommodate participants, so it really does pay to have a last-minute look at the website before catching the train!)

Dr Simon Prince  
UCL  
email: [s.prince@cs.ucl.ac.uk](mailto:s.prince@cs.ucl.ac.uk)



## BMVC 2008 – Call for Papers



The British Machine Vision Conference is the main UK conference on machine vision and related areas. Organised by the British Machine Vision Association, the 19<sup>th</sup> BMVC will be held 1–4 September 2008 at the University of Leeds, Leeds, UK.

Authors are invited to submit full-length high-quality papers in image processing and machine vision. Topics include, but are not limited to, the following:

- Statistics and machine learning for vision
- Model-based vision
- Stereo, calibration, and geometry
- Image processing techniques and methods
- Person, face, and gesture recognition
- Texture, shape, and colour
- Motion, flow and tracking
- Video analysis
- Segmentation and feature extraction
- Document processing and recognition
- Biomedical applications
- Vision for visualisation and graphics

All papers will be blind-refereed by at least three members of the international programme committee. Successful papers will be presented at the single-track conference. Proceedings will be published in paper and electronic form and distributed at the conference and online.

### Conference website

<http://www.comp.leeds.ac.uk/bmvc2008/>

### Call for Workshops

We invite proposals for workshops to be run in association with BMVC 2008. Please see the workshops page on the conference website.

Dr Mark Everingham  
University of Leeds  
email: [me@comp.leeds.ac.uk](mailto:me@comp.leeds.ac.uk)

## Research Funding available from the VVG Network of Excellence!



The VVG Network of Excellence exists to fund cross-disciplinary research in the intersection of Vision, Video and Graphics. Typically a researcher from a laboratory of one kind (vision, video or graphics) is funded to spend time in a laboratory of another kind. Students, Research assistants, and academics have all been supported. Researchers can come from or go to industry or overseas. The network is able to act as a 'marriage broker' between laboratories.

VVG can fund the living cost, accommodation, travel and out-of-pocket expenses (such as loss of tuition fees) for the researcher. Apply for as much as you can justify: typical awards are a few thousand pounds.

Anyone may apply. Administration is very light – just couple of sides of A4. Applications are processed by rapid (we emphasise rapid) peer review.

For details on how to obtain VVG funding, contact Peter Hall.

Dr Peter Hall  
University of Bath  
email: [pmh@cs.bath.ac.uk](mailto:pmh@cs.bath.ac.uk)

## BMVA Activities

BMVA now has an impressive range of activities, which cover organising conferences and meetings, providing bursaries to students for attending conferences, laying down an archive of PhD theses, awarding prizes, and last but by no means least, publishing BMVA News! In addition, more activities are planned – such as a Video and Poster Competition. From time to time BMVA News publishes details of all such activities, particularly to advertise them and to report on their progress or completion. However, it is a good idea for Members to browse our now quite extensive website, and also use it to keep up to date with what we are doing. You may also contact Officers of the Association to suggest further activities, or even to organise them!

At present we are particularly keen to build up the thesis archive. For further information on this see the appropriate webpage, appearing prominently under the 'General information' heading on the main BMVA site (see below):

<http://www.bmva.ac.uk>

### Main headings on the BMVA Website

#### About the BMVA

Aims & objectives  
Activities  
Vision applications  
BMVA Fellows

#### General information

Contact information  
Joining the BMVA  
Executive committee  
Thesis archive  
Bursaries & prizes

#### Keeping in touch

BMVA News  
The Pixel  
Feedback

#### Meetings

Conferences & meetings  
British machine vision conf  
Annual summer school  
Meeting sponsorship

#### Publications

British machine vision conf  
Annals of the BMVA

#### Related Links

Vision as a career  
UKIVA  
PEIPA  
AVA

Also, now is the time to remind yourself about our travel bursaries. Better early than late. But notice that one of the conditions is to write a report for BMVA News!

Professor Roy Davies  
Editor, BMVA News  
email: [e.r.davies@rhul.ac.uk](mailto:e.r.davies@rhul.ac.uk)



## VIE 2008 – Call for Papers

### General Co-chairs

Ebroul Izquierdo (QMUL, UK)  
Guizhong Liu (Xi'an Jiaotong University, China)

### Organising Committee

Ingemar Cox (University College London, UK)  
Roy Davies (Royal Holloway, Univ. of London, UK)  
Jean-Luc Dugelay (Eurecom Institute, France)  
Alan Hanjalic (Delft Univ. of Technology, Netherlands)  
John Robinson (University of York, UK)  
Mihaela van der Schaar (UCLA, USA)  
Sergio Velastin (Kingston University, UK)  
Feng Wu (Microsoft Research Asia, China)  
Li-Qun Xu (British Telecommunications Plc, UK)

### IET VIE Coordination

Ian Collier (Network Manager)

### Local Organising Committee

Shihua Zhu (Xi'an Jiaotong University, China)  
Yilin Chang (Xidian University, China)  
Shuai Wan (Queen Mary, University of London, UK)  
Fuzheng Yang (Xidian University, China)

### Call for Papers

The Institution of Engineering and Technology (IET) Visual Information Engineering conference aims at bringing together leading international researchers, developers, creators, educators, and practitioners in networked media, image processing, machine vision, computer graphics, virtual and augmented environments, and visual communications to share our latest achievements and explore future directions and synergies.

In 2008 the 5<sup>th</sup> VIE conference will focus on fostering closer links to China by both academia and industry. VIE 2008 is sure to provide the ideal forum for researchers, practitioners and educators in the VIE community to discuss results and advancements in a high quality, peer reviewed environment.

VIE 2008 will be held at Xi'an International Conference Centre in one of the most beautiful and historical cities

of China. The scientific program will include presentations by invited internationally-renowned plenary speakers, special sessions, and tutorial and regular sessions with contributed research papers.

Topics of interest include, but are not limited to:

- Application of visual information engineering
- Architectures
- Data hiding and watermarking
- Distributed camera networks for surveillance
- Distributed virtual reality
- Entertainment and gaming
- Graphics, visualisation, animation, rendering
- Image acquisition hardware
- Image and video analysis, segmentation
- Image and video-based model synthesis
- Medical imaging and healthcare
- Motion analysis and tracking for surveillance
- Multimedia database management
- Multimedia processing and semantic web
- Networked multimedia systems
- Scalable source and channel coding
- Semantic multimedia and applications
- Synthetic image generation and manipulation
- Visual information retrieval
- Visual media management

### **Paper Submission**

Prospective authors are invited to submit papers using the on-line system at the conference website:

<http://vie08.qmul.net/>.

Accepted papers will be published in the Conference Proceedings. Extended versions of VIE papers will be reviewed and considered for publication in Special Issues of the IET Image Processing, IET Computer Vision (formerly IEE Proceedings Vision, Image and Signal Processing) and the EURASIP journal on Image and Video Processing.

### **Important dates**

- Submission of full papers: 17 March 2008
- Notification of acceptance: 30 April 2008
- Submission of camera-ready papers: 20 May 2008
- VIE 2008: 29 July – 1 August 2008

Professor Ebroul Izquierdo  
Queen Mary, University of London  
email: [ebroul.izquierdo@elec.qmul.ac.uk](mailto:ebroul.izquierdo@elec.qmul.ac.uk)

## **EMVA List of Standard Compliant Products**

The EMVA has released a list of 1288 Standard compliant products with downloadable datasheets. EMVA 1288 is a standard for characterization and publication of characterization data of image sensors and cameras targeted to machine vision applications. It follows a unified comprehensive approach to characterize image sensing equipment based on physical parameters. The standard defines measurement procedures as well as data presentation guidelines. This is of great benefit to the user of image sensors and cameras as it allows a true datasheet based comparison of products as well as modeling and optimization of required image sensor performance for a given application.

The list is open. Manufacturers that provide components characterized according to and compliant with the EMVA1288 standard may submit a request to be included in the list to: [info@emva.org](mailto:info@emva.org).

EMVA 1288 standard is developed by an open working group that unifies over twenty leading component manufacturers, vision users and research institutes.

Further information is available at:  
[www.standard1288.org](http://www.standard1288.org)

### **About EMVA**

Founded in May 2003 in Barcelona, the European Machine Vision Association currently has 100 members representing 18 nations. Its aim is to promote the development and use of machine vision technology and to support the interests of its members – machine vision companies, research institutions and national machine vision associations. The main fields of work of EMVA are: standardization, statistics, the annual EMVA Business Conference and other networking events, public relations and marketing. To find out more, visit the EMVA web site <http://www.emva.org>.

Patrick Schwarzkopf, General Secretary  
EMVA  
email: [schwarzkopf@emva.org](mailto:schwarzkopf@emva.org)

## BMVA Sullivan Thesis Prize – Call for Nominations

The British Machine Vision Association annually awards a Best Thesis prize (to commemorate the contribution made by the late Professor Geoff Sullivan) to the best doctoral thesis submitted to a UK University, in the field of computer or natural vision.

Recommendations for the prize are considered by a Selection Panel appointed annually by the BMVA Executive Committee. The decision of the Selection Panel is announced at the end of the following July. When possible, the presentation will be made at the conference dinner of the British Machine Vision Conference, held annually during September.

The BMVA Executive Committee now seeks nominations for the Sullivan Prize for theses examined during the calendar year 2007. Please send any nominations to the BMVA Secretary, Dr Andrew Fitzgibbon (secretary@bmva.ac.uk) by the end of February 2008.

Nominated theses should be made available through a web page: the successful author is expected to make his/her thesis available as a PDF for distribution via the BMVA web-site from September 2008 onwards.

For conditions, please see:

<http://www.bmva.ac.uk/admin/sullivan.html>

Dr Andrew Fitzgibbon  
BMVA Secretary  
email: secretary@bmva.ac.uk

## Corrigendum

Unfortunately, my Editorial in the last issue succumbed to a silly error due to my supposition that VS remained linked to the same major conference. In fact, in 2006 it was linked to ECCV (in Graz) and in 2007 it was linked to CVPR (in Minneapolis). Many thanks to Radu Horaud for this correction.

Professor Roy Davies  
Editor, BMVA News  
email: e.r.davies@rhul.ac.uk

## BMVA Distinguished Fellow 2007

The BMVA Distinguished Fellow award is a special award in order to honour some of the most prominent members of our community in recognition of their services. The award is made every year to one person, and only one person. The BMVA Executive Committee is very pleased to announce that the *BMVA Distinguished Fellow 2007* is Bill Adaway of Computer Recognition Systems, UK. The award will take place at BMVC 2008 in Leeds.

Dr Majid Mirmehdi  
BMVA Chairman  
email: chair@bmva.ac.uk

## Perspective Projection Puzzle

When I inserted the picture of the Tay Estuary into the first column on p. 8, it seemed far too small, and I had the brainwave of stretching it vertically to make a more readily interpretable, if distorted, picture. In fact, it hardly looks distorted, and I wondered how this could be, considering that a gross perspective transformation has been instituted.

The first correct explanation *that looks as if it could be understood by a good proportion of readers* will be included in the next issue of BMVA News.

Professor Roy Davies  
Editor, BMVA News  
email: e.r.davies@rhul.ac.uk

## BMVA News – Items for Inclusion

Possibilities for inclusion include anything that members will find interesting and relevant:

- news (awards, events, developments ...)
- reports on meetings
- articles and reviews
- conference information
- BMVA activity information
- crosswords, puzzles, pictures, cartoons, ...
- responses to previous editorials!

## Free tickets for IPOT 2008

Every year, the Image Processing and Optical Technology (IPOT) exhibition takes place in the National Exhibition Centre in Birmingham. This exhibition brings together manufacturers, users and researchers in the fields of image processing and vision systems and highlights latest technical developments and state-of-the-art products.

The next event will be on 13–14 February 2008 and BMVA will be supporting the event. There will also be a BMVA stand in the main exhibition hall to promote the community and provide live demonstrations of some of the exciting work being undertaken by our members.

To further support the event we are offering a free ticket for IPOT 2008 with every issue of the December BMVA newsletter. We would encourage you to visit IPOT and the BMVA stand to see the demonstrations and find more about recent BMVA activities.

For more details about the IPOT Exhibition visit the IPOT website: <http://www.ipot.com/>.

Dr Aphrodite Galata  
 BMVA Publicity Officer  
 The University of Manchester  
 email: [agalata@cs.man.ac.uk](mailto:agalata@cs.man.ac.uk)

## BMVA Video and Poster Competition

One of the principal roles of BMVA is to promote UK Computer Vision research both to industry and the general public.

The BMVA is holding a competition to find the best examples of videos and posters that represent Computer Vision research within the UK. We are inviting individual researchers (especially PhD students and RAs) or research groups from any UK higher institution to submit short videos and posters that aim to explain a particular research theme in the area of Computer Vision. Posters and videos should be free standing and should present the work in such a way that the average science graduate can understand it and appreciate the benefits of the research.

Posters and videos will be judged according to the following criteria:

- How well they promote computer vision and its applications to the general public
- Their ability to demonstrate the practical applications of the research to industry.

The best overall poster or video, as judged by a panel selected from the BMVA Committee, will receive the top prize of £500. The runners up will each receive a prize of £300 and their material will be used by the BMVA to promote the significant contribution of Computer Vision research in the UK to Industry and Society. Copyright will remain with the authors/Universities but BMVA reserves the right to use the best posters and video materials at conferences and exhibitions.

Video submissions should be no more than 3 minutes long at full PAL resolution (728 × 576) as either MPEG or AVI files. Video should not contain a voice-over but can use titles and explanatory captions where required. Poster submissions must use the template provided by BMVA to ensure a standard style.

All submissions must arrive by 14 March 2008.

The winners will be notified by email by the end of March and will be announced through the BMVA website and newsletter.

For further details about the competition and information on how to obtain a copy of the BMVA poster template, please contact Aphrodite Galata, BMVA Publicity Officer.

Dr Aphrodite Galata  
 The University of Manchester  
 email: [agalata@cs.man.ac.uk](mailto:agalata@cs.man.ac.uk)

## Your BMVA Road Test

If you're well up in this field you will know all the acronyms used in this issue! See below.

AI	HOSDB	MRI
AVI	ICCV	PAL
BCS	IET	ROC
BRDF	i-LIDS	SIFT
CBIR	IPOT	TPCG
CMU	IUPS	UCLA
CVPR	MAP	USC
ECCV	MICCAI	VIE
EMVA	MPEG	VVG
EURASIP	MRF	



## BMVA Symposium – a Pictorial Record

A good many people attended the BMVA Symposium on Security and Surveillance, held at the BCS, London on 12 December. In fact, the venue was declared FULL one week in advance, and with such a sprinkling of international speakers this was probably to be expected. I attach a few pictures that I took during the lectures. Note that to avoid disturbing the speakers I didn't use flash, so the results could have been better: nevertheless they should serve as a useful record.

Professor Roy Davies  
 Editor, BMVA News  
 email: e.r.davies@rhul.ac.uk



A C Burger described how the US Office of Naval Research is interested in predicting events before they happen.



Paul Hosmer describing the HOSDB i-LIDS system and its impact on performance evaluation.



Valerie Leung answering questions, with Andrea Cavallaro (meeting Chair) standing on the right.



James Ferryman's talk emphasised temporal as well as spatial errors in surveillance tracking.