

# BMVA News

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

Volume 17 Number 4  
June 2007

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**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 September 2007.

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<sup>1</sup>The British Machine Vision Association and Society for Pattern Recognition is a Company limited by guarantee, No. 2543446, registered in England and Wales. Registered Office: Granta Lodge, 71 Graham Road, Malvern, WR14 2JS. The Association is a non-profit-making body and is registered as charity No. 1002307.

## Editorial: *Photography – a Neglected Skill?*

In my third year laser optics course, I often have occasion to talk to students about cameras. I would say that 90% of them own a digital camera or have access to one, but almost no-one can say what an  $f$ -number is, and even fewer have any idea that it controls depth of focus as well as the collected light. All this is a far cry from where we were in the old analogue camera days, though of course the later analogue cameras mostly set exposure automatically. Of course it's always the case that the more you understand your tools, the more you get out of them. And so it is with digital cameras. However, in that case there is also the accompanying computer software package, not to mention packages such as Paint Shop Pro which have widely varying degrees of sophistication. Unfortunately, some such packages often leave one baffled about the best way to use them, and in any case it is amazing how a random set of capabilities can be assembled together and called a utility. From a machine vision viewpoint, not knowing the exact algorithm is anathema, and one often feels it would be good to 'get in there' and add some functionality of one's own. Of course, such packages don't tend to provide hooks that would permit this. In one package, the red-eye removal option provides a whole raft of replacement irises of different colours and patterns, but in my experience it is unusable and it is easier to add the odd black dot, with a puff of grey and a white speck for the glint, and one is far better off!

However, I have had remarkably good results with corrections for barrel and perspective distortion: the options provided by PSP work extremely well (see the examples on pp. 9 and 10 below). In fact, over time, I've had to judge a good number of posters at BMVC

and the BMVA Summer School, and sometimes it is useful to take photos of them and compare them more scientifically later. Here I have a secret to share (at least, I haven't seen it published elsewhere). Taking a photograph of a poster (usually indoors), will result in flash being needed. Unfortunately, posters are nowadays almost always glossy, so one gets a bright whitish area in the middle where near-specular reflection took place. To avoid this, one can take the picture obliquely (so there's nowhere where the viewing angle is normal to the poster): but then one needs to apply perspective correction software to eliminate the effect. I've found that this normally gives near-perfect results.

All this confirms that as photographers we have new skills to acquire, and maybe one can partly be forgiven for forgetting how a camera really works: the balance of skills has shifted from the camera to the software. But old hard-learned lessons and skills remain invaluable. And of course there's the principle 'garbage in—garbage out', or information that's lost during acquisition can never be regained (this principle also applies for low-level vision operations).

One ongoing problem with photography is that when one took the photograph, one didn't realise there was a lampshade there, apparently growing out of someone's head, and later it turns out to be the only available photo that one can use in BMVA News. Several times I've found it necessary to correct such artefacts arduously by hand. Of course, if I'd had a sophisticated package and had 2 or 3 views of the scene, I could have used standard 3D techniques to eliminate the problem.

Which takes me neatly to Andrew Zisserman's work – leading to his recent award of an FRS (see p. 4). Few people can have had such an impact in major areas of vision – particularly regarding 3D and invariants, and also in the area of photography. For example his work covers photo stitching and such questions as "How do I organize my holiday snaps?" (the short title of one paper). In fact, what he has done and achieved underlines and underlies all my mutterings above. However, I guess we are still some way from having a camera attached to one's lapel that will continuously photograph the world and then suggest perfect reconstructed artistic highlights and brilliant compositions that one has unknowingly experienced all day! For composing photographs is a chore with so many pitfalls and so many things about lighting to take into account – and the technical and the artistic are so intertwined – that it is excruciatingly difficult to keep one's mind on all these aspects at the same time.

Professor Roy Davies  
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## Nominations for BMVA Executive Committee

Nominations are requested for the forthcoming election of Executive Committee members of the BMVA.

Nominees must be paid-up members of the Association and agree to serve for a period of two years. A member of the Committee is expected to participate in the bimonthly committee meetings taking place in a location deemed mutually most convenient to committee members. Completed nomination forms should be sent to the BMVA Secretary at the address below and must be received by 31 July 2007.

This request for nomination must be signed by the individual standing and by one other member. The nomination should also include a brief biographical statement for distribution to BMVA members.

The elected committee consists of ten elected members, five of whom are elected each year. Details of the current members may be found at:

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

The members elected in 2005 who will stand down this year are:

- Professor Roy Davies
- Dr Andrew Fitzgibbon
- Dr Peter Hall
- Dr Majid Mirmehdi
- Professor Tim Ellis (Elected 2006)

So there will therefore be 5 elected places available this year. If more than 5 nominations are received for the elected places then a postal ballot will be held. Voting papers will be sent out in early August and will need to be returned by 1 September. Each member will be able to vote for up to 5 candidates. The results will be announced at BMVC 2007 at the University of Warwick and in BMVA News.

Andrew Fitzgibbon  
Microsoft Research Ltd  
email: secretary@bmva.ac.uk

**Postscript:** Don't forget my plea for *Letters to the Editor* regarding points that would be of general interest to readers and the community – Ed.



## **BMVC – Time to Register!**

British Machine Vision Conference 2007, 10–13 September, University of Warwick.

General Chairs: Abhir Bhalerao and Nasir Rajpoot

The British Machine Vision Conference (BMVC) is the main UK conference on machine vision and related areas. Organised by the University of Warwick under the auspices of the BMVA, the 18<sup>th</sup> BMVC will be held during 10–13 September 2006. The conference will take place at the environmentally friendly campus of the University of Warwick just outside Coventry.

The area chairs' meeting, held on the 18 June, considered 287 valid submissions out of a total of 308 for inclusion. A total of 114 papers have been selected (41 orals and 73 posters) for presentation at this year's conference. Like previous years, BMVC 2007 will have single-track oral and poster presentations. The full programme will shortly be published on the conference website.

Registration is now open and can be accessed from the main conference web page (see below) or directly from:

<http://www.dcs.warwick.ac.uk/bmvc2007/register.html>

The registration is for the conference and accommodation (residential) or only the conference (non-residential). The en-suite accommodation is available on a first-registered, first-reserved basis. Please register early to avoid accommodation problems.

In addition to the contributed papers, BMVC 2007 will include:

- A tutorial by Andrew Davison, Andrew Calway, Walterio Mayol-Cuevas on Visual SLAM (10 September)
- Invited talks by Hans Knutsson and Mubarak Shah
- A workshop on Vision, Video and Graphics (14 September).

The main website has links to maps and travel details. We hope that unlike some of our new students, you won't end up at Warwick (a small town near Coventry) wondering how to get to the University from there.

### **Important dates**

Deadline for early registration: 1 August

Tutorial: 10 September

Main conference: 11–13 September

Workshop: 14 September.

For further details, please see the conference website at:

<http://www.dcs.warwick.ac.uk/bmvc2007/>

Our sincere thanks go to all the referees who did a brilliant job of their reviews, and to the area chairs who contributed to an efficient and fair meeting to finalise the acceptance decisions.

We look forward to seeing you at Warwick (campus) in September.

Abhir Bhalerao and Nasir Rajpoot  
University of Warwick  
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[nasir@dcs.warwick.ac.uk](mailto:nasir@dcs.warwick.ac.uk)

**Important note regarding this and other conference information:** to be sure of getting the very latest updated/corrected information, BMVA Members should always cross-check with the relevant website. – Ed.

## Professor Andrew Zisserman awarded FRS!



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Professor Andrew Zisserman<sup>2</sup> is one of the principal architects of modern Computer Vision. His work in the 1980's on surface reconstruction with discontinuities is widely cited. He is best known for his leading role during the 1990's in establishing the computational theory of multiple view reconstruction and the development of practical algorithms that are widely in use today. His laboratory in Oxford is internationally renowned, and its work is currently shedding new light on the problems of object detection and recognition.<sup>3</sup>

Cathryn Frail  
The Royal Society  
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## Shape Representation, Analysis and Perception

One-day BMVA symposium in University College London, UK on 5 November 2007

Call for Participation

Chairs: Will Smith and Edwin Hancock, University of York.

Computer vision draws on a diverse range of methods to represent shape for the purposes of recognition. Broadly speaking, the available methods are informed by a number of disciplines including geometry, statistics, neuroscience and psychophysics. Recent advances in the area include the use of ideas from differential geometry to construct representations for complex non-Euclidean forms of data and the use of ideas from statistics to construct shape spaces and shape-priors for objects that exhibit subtle modes of shape-variation. Moreover, there have been significant advances in the structural representation of shape, allowing hierarchical models and symbolic reasoning to be applied to high level analysis tasks such as the learning of shape-classes. Brain imaging studies using MEG and fMRI have also furnished information concerning the mechanisms involved in the perception of visual form.

The aim of this meeting is to provide a forum for the discussion of recent results in shape representation, analysis and perception. Contributions describing recent work on shape representation, analysis or perception are welcome. Potential topics include, but are not limited to: statistical models, construction of shape-spaces, structural and syntactic approaches to shape analysis, shape priors, learning and discovery with shape representations, modelling biological form (including faces), brain imaging studies, psychophysical studies, shape-from-X (shading texture, specularly, motion etc).

Please submit an extended summary of about one A4-sized page (no longer than two pages) in length (PDF preferred). Send contributions by email attachment (1Mb max please!) to Edwin Hancock by 15 September 2007.

Professor Edwin Hancock  
University of York  
email: [erh@cs.york.ac.uk](mailto:erh@cs.york.ac.uk)

<sup>2</sup>Professor Andrew Peter Zisserman FRS is Microsoft/RAE Professor of Computer Vision, Department of Engineering Science, University of Oxford.

<sup>3</sup>The text and picture are reproduced with kind permission of the Royal Society.

## Biometrics Summer School 2007



I've just come back from the Biometrics Summer School and it's great fun and very informative. It's held in Alghero (Sardinia, Italy) each year, organised by Massimo Tistarelli from the nearby University of Sassari. It is loosely affiliated to the Biosecure network of excellence, and I understand is co-sponsored by IAPR. My students enjoy it so I send at least one every year. Essentially, there's a bunch of lecturers from all over the world and about 40 or 50 students mainly from Europe but with some US and Asia too. The schedule is nicely arranged: there are a couple of lectures in the morning and late afternoon. As such there's a long (and necessary) lunch break, so you can go and have a swim in the pool.

The lectures are quite long, but the lecturers try and break up the material – or even have a break mid-way. Whilst there, I managed to go to Massimo Tistarelli's excellent overview and introduction, then there was David Maltoni (Bologna) on Fingerprints, Alessandro Verri (Genova) on Classifiers, John Mason (Swansea) on Speaker Recognition, Rama Chellappa (Maryland) on Face Recognition in Video, Josef Kittler (Surrey) on Multiple Classifiers and myself on Gait and Ear. Later in the week there is Tieniu Tan (CAS) on Iris, Alice O'Toole (Texas) on Human Perception, and then there are Face, Cryptography, Exploitation, Surveillance. As such there is a wide range of topics and I suspect it is designed to cater more than once for each student's particular interest.

The food is excellent but vegetarians don't get much variety (as in much of Europe). One has to do battle with some elderly but very sprightly Italians at meal times. They enjoy the food too (and the wine, which there are lashings of). The social programme includes a visit to some local caves (I've never had time to go) and there's a visit to Alghero which is a late mediaeval

walled town – full of American tourists as a cruise liner had just pulled in, but I had not seen that before. It's at quite reasonable cost from the UK too, as you can fly there from Stansted with RyanAir. I enjoy lecturing there and my students enjoy the scientific and the social programmes and find it very informative for their research. Like the BMVA Summer School on Computer Vision, I think it's well worth sending them there.

Professor Mark Nixon  
University of Southampton  
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## Annals of the BMVA

Slowly but surely the Annals are coming into being. The first batch of Annals, originating from the BMVA/Colour Group GB meeting of last June, has been fully refereed and edited, and now sits in its own clear location on the BMVA website:

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

Clearly, there has been some delay in achieving this goal: while some of the time has gone in the natural process of refereeing, when we looked at the Annals website, we decided that it would be far better for it to have its own distinct character and individual font – rather than merely taking the short-cut of using the BMVC format. We think this was a sound decision, but unfortunately, resetting the papers in this new style took considerable time and effort.

Here we have to thank Dr Adrian Clark (University of Essex) for his sterling work: he has now been officially designated as *Production Editor* of the Annals, working alongside myself as Editor.

We should shortly be seeing more BMVA technical meetings contributing to the Annals, and we hope that presenters will do their best to submit good written versions of their papers via the chairs of the meetings. It is important to note that new carefully prepared style-files will need to be used. These will shortly be available on the website.

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

## Vision, Video and Graphics Workshop



This one-day workshop is to be held on 14 September at Warwick, in association with BMVC 2007.

### Co-chairs

- Peter Hall, University of Bath
- John Robinson, University of York
- Roland Wilson, University of Warwick: local chair

The VVG'07 one-day workshop is to take place immediately following the British Machine Vision Conference 2007. For details of BMVC and the workshop see:

<http://www.dcs.warwick.ac.uk/bmvc2007/index.html>

**Guest speaker:** Aaron Hertzmann, University of Toronto

The general workshop theme is the convergence of Vision, Video, and Graphics. Specific areas of interest include, but are not limited to:

- Image based rendering and modelling
- Content based information retrieval for images and video
- Video conferencing
- Augmented reality and HCI
- Graphic insertion into photos and video
- Vision methods in image and video compression
- Non-photorealistic rendering from photos and video
- Video visualisation
- Animation dynamics

Please send your contributions to any of the chairs by the deadline – *now extended to 27 July 2007*. Accepted papers will be distributed via CD at the meeting: choose your own style. Note that all material will be burned to disc, so there is no page limit. Selected high-quality papers will be invited to submit to the Annals of the British Machine Vision Association.

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

## Vision, Video and Graphics Summer School 2007

The VVG network summer school will be held on 20–21 September at the University of Bath.

- Designed for PhD students, typically in year 1 or 2, from Vision, Video, or Graphics labs.
- A two-day school, delivered by researchers active in the field.
- A practical lab session to re-enforce lectures.
- A poster session to help build presentational skills: a prize for the best poster.
- Open to students from both UK and non-UK labs.
- The cost of £250 per student includes accommodation and meals.
- EPSRC sponsored, some bursaries are available (UK students on EPSRC grants only).

### The syllabus

- Image based rendering and cameras: Andrew Fitzgibbon (Microsoft Research)
- The Industrial Face: Oliver Grau (BBC)
- Content Based Retrieval: Andrew Zisserman (Oxford University)
- Human Model Motion Capture: Aphrodite Galata (Manchester)
- Point Based Rendering: Markus Gross (ETH Zurich)
- Geometric Model Acquisition: Steve Maybank (Reading University)
- Non-photorealism from Images: Andrew Bangham (UEA)
- Light and Shadow: Graham Finlayson (UEA)
- Tracking: Richard Bowden (Surrey University)
- Advanced Interaction: John Robinson (York)
- Statistical Models and Methods: Andrew Blake (Microsoft Research)

The VVG Network of Excellence is sponsored by EPSRC.

For further information, visit the website:

<http://www.cs.bath.ac.uk/VVGschool>

Places are limited, so please send early expressions of interest and enquiries about bursaries to either of the organisers:

Peter Hall and John Collomosse  
University of Bath  
email: [pmh@cs.bath.ac.uk](mailto:pmh@cs.bath.ac.uk)  
[jpc@cs.bath.ac.uk](mailto:jpc@cs.bath.ac.uk)





## VIE 2007 – coming very soon!

Visual Information Engineering 2007: *Bridging the Gap between Theory and Applications*. The conference will take place on 25–27 July 2007 at the Royal Statistical Society, London.

<http://conferences.theiet.org/vie2007/index.htm>

The IET Visual Information Engineering Conference 2007 (VIE 2007) addresses the fundamental elements of image, video and graphics research and development.

At the excellent Royal Statistical Society venue in London, this event will create an important networking forum in which academic and industrial participants can meet and present their work.

### Keynote speakers

Professor Philip Torr, Head of Computer Vision Group, Oxford Brookes University, UK: *Dynamic Markov random fields*. This talk will describe some new developments in dynamic Markov random fields and some efficient algorithms developed for their solution. Dynamic Markov random fields are time-varying and have many potential applications in vision: the talk will discuss their application to video segmentation, human pose estimation and parameter learning.

Professor Dr Ing. Oliver Bimber, Department of Augmented Reality, Bauhaus University Weimer, Germany: *The reality of Mixed Reality: problems, solutions, and trends*. This talk will discuss the latest research on Mixed Reality with reference to the challenges of combining computer vision and computer graphics for example in the context of mobile phones and display systems.

### Tutorial Programme

Professor Roy Davies, Royal Holloway, University of London, UK: *Methodology for the systematic location of objects and structures in images*.

Dr Peter Hall, University of Bath, UK: *The synergetic convergence of vision, video and graphics*.

Professor Ebroul Izquierdo, Queen Mary College London, UK: *The semantic gap in visual information retrieval*.

Dr Tamer Shanableh, American University of Sharjah, UAE: *Codec level anatomy of video transcoding*.

### To register online, visit:

<http://conferences.theiet.org/vie2007/register.htm>

For further details please contact:

Elizabeth Jarvis  
The IET  
email: [ejarvis@theiet.org](mailto:ejarvis@theiet.org)

## BMVA Student Bursaries

If you are a PhD student at a UK university, and are presenting a paper at a major vision conference, then you are eligible to apply for a BMVA bursary worth up to £500.

Applications are made to the bursary secretary, [bursaries@bmva.ac.uk](mailto:bursaries@bmva.ac.uk). You should send a copy of your paper, a breakdown of anticipated costs, and confirmation from your supervisor that you are a student. You should apply within four weeks of learning that your paper has been accepted.

Further details are available though the BMVA website:

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

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



## 4<sup>th</sup> European Conference on Visual Media Production (CVMP 2007)

27–28 November 2007, Savoy Place, London

CVMP 2007 is the fourth in a series of conferences bringing together practitioners in media production from film, broadcast and games with researchers in imaging and graphics. CVMP 2007 provides a European forum for discussion of the latest research advances and state-of-the-art industry practice in content production and post-production.

Interested in submitting a full or short paper for this established conference?

Visit <http://conferences.iee.org/cvmp/cfp.htm> for more details.

Accepted papers will be published in the Conference Proceedings published by the IET.

### Important dates

Submission Deadline, Full paper: 3 August 2007

Notification of acceptance: 28 September 2007

Submission of full paper: 17 October 2007

Submission Deadline, Short paper: 28 September 2007

Notification of acceptance: 12 October 2007

Submission of short paper: 26 October 2007

Prospective authors are invited to submit full papers of up to 10 pages or short papers of one page. To submit your paper visit:

<http://conferences.iee.org/cvmp/cfp.htm>.

Ian Collier  
The IET  
email: [icollier@theiet.org](mailto:icollier@theiet.org)

### 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!
- Letters to the Editor.
- Competitions.

### What did Jasper see?



Turn to the back page to find out!



### BMVA Summer School 2007

This was held at the University of East Anglia, Norwich during the week 1–6 July 2007. It was organised with flair and enthusiasm by Dr Richard Harvey (UEA), and by all accounts the participants had an interesting and challenging time. Something of this will be seen from the pictures of the project planning exercise in which teams competed to construct the tallest self-supporting structure that will carry a can of coca-cola. See also the puzzle about how best to correct for radial distortion (though to my mind the biggest puzzle is in trying to work out what they were all *really* looking at!).



combination of radial distortion and perspective has led to some rather weird rectangular boxes near the bottom. Let me now open this one to readers, who can tell me what went wrong. (Don't tell me I should have corrected for radial distortion *before* applying perspective correction, because that's what I did!) Actually, I think something quite subtle is going on here.



“Professor Chantler and Dr Davison, with the Summer School Participants, ponder how best to correct for the radial distortion present in this photograph.” – paradoxical title provided by Dr Richard Harvey.

My own quick solution to this problem is presented opposite, but of course I cheated by using Paint Shop Pro.

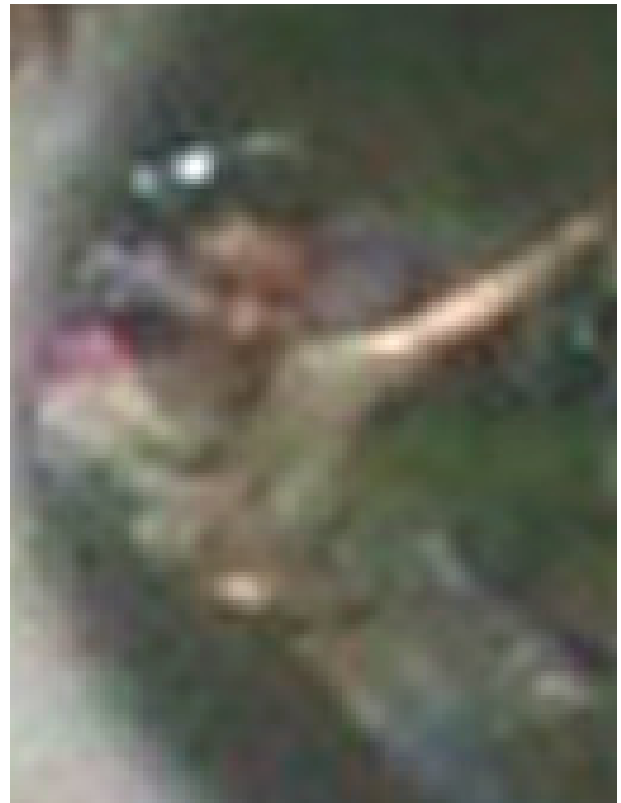
Overleaf you will see the excellent winning poster by Ioannis Tziakos of QMW, London. Unfortunately, I haven't here been so lucky using PSP, as the



### What Jasper saw!



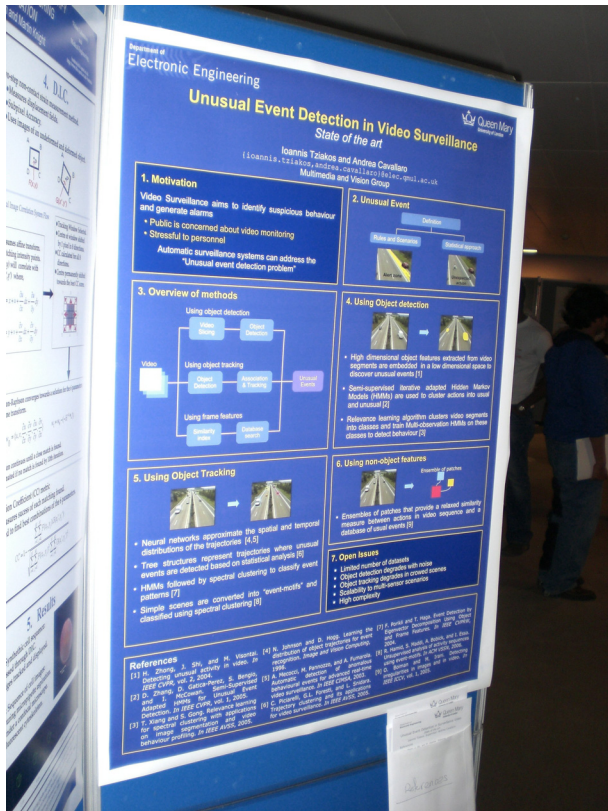
The eyes say it all!



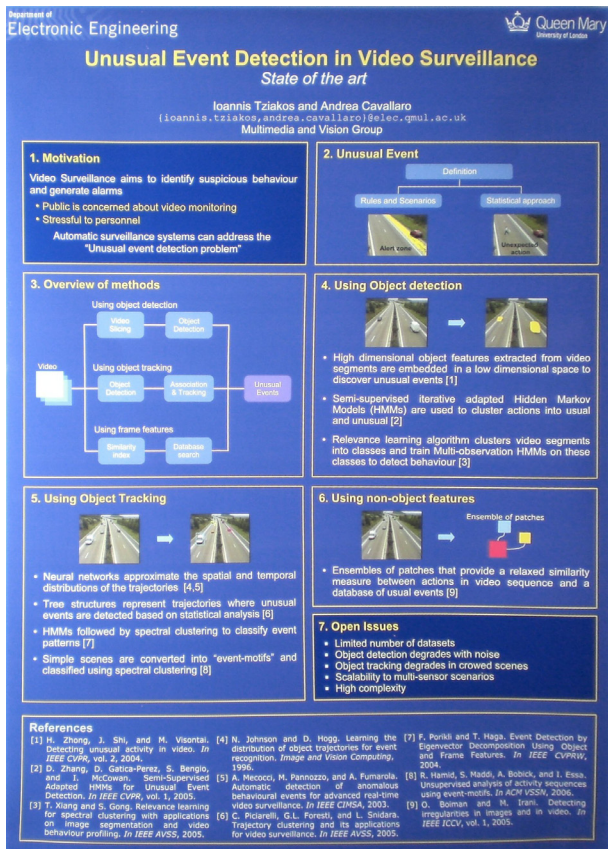
Fascinated by what Mummy is doing (camera not quite discernible).

Doing better than I did using PSP on this last picture is yet another challenge that aspiring vision experts should take up! However, it was good enough for my daughter to ask me where I got that picture of her! Little did she realise when she sent me the original (see p. 8).

Professor Roy Davies  
Editor, BMVA News  
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Original picture of best poster



Best poster picture