BMVA News

BMVA News[1] 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 10 March 2015.

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Editorial: *The Three Wise Men of Publishing*

My father was never lacking in didactic (true) stories and wise cautions. He once recalled to me that on one occasion he had lent his best gold-nibbed fountain pen to a neighbour,

who proceeded to drop it and destroy the nib. The neighbour then returned the pen and weakly said "Sorry". From that moment he never lent anything to anybody, except within the family. He even backed this up with the statement "There are three sorts of people – friends, neighbours and relations, and it doesn't pay to muddle them up."

Likewise, in publishing, there are three sorts of people – authors, editors and referees. These shouldn't be confused with each other either. However, a moment's thought indicates that they are all drawn from the same body of people, and that all may be authors, referees or even editors at different times in their lives, or even in parallel, for different journals or publishers. Nevertheless, in the case of a particular journal at a particular time, the editor has a special authority and the referees and authors have to be kept rigorously separate. Each has his/her own hat to wear, and for once in our modern often amoral society, these various people do observe the duties indicated by these hats with a high degree of rigour and propriety.

Actually, it is useful to bear in mind that referees are all people, each with their own motivations and pressures, not to mention having varying amounts of free time available. As an editor for several journals, and also from time to time for various conferences, I have to admit to finding difficulty in obtaining enough suitable referees for the papers I manage. Basically, not many people nowadays have enough free time to perform this vital function or to perform it sufficiently often or effectively. While they want to publish papers, which necessarily have to be reported on by referees, they can be unable or unwilling to undertake this function for other authors. In fact, it seems inescapable that people have a duty to their community to do their share of refereeing, especially if they are serious about publishing their own work. I think I have said once or twice that I have sometimes had to ask very many potential referees (PRs) before I actually get all the reviews I need. My current record is about 22, and indeed I currently have a paper on my desk which already totals that number. To date this paper has had 10 declinations and 8 'uninviteds' (i.e., PRs who have had to be turned down after ~2 weeks of not agreeing or even responding, so that other people can be asked to act). Unfortunately, it is difficult to know why people decline or fail to answer. Clearly, the latter is, to say the least, bad manners, and at worst it leaves the whole

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process in limbo – viz., the reviewing process staggers to a halt for 2 weeks, with the authors being very hard done by. I can't see any justification for not responding: it is simply selfish, whereas declination leaves no-one disadvantaged (I suppose the editor himself is fair game!).

On the other hand, I can't pretend to be blameless myself. The other week I very much wanted to referee a particular paper: it was on my own expertise and even had me eager to find out what had been achieved, and how. But I was held up by the advent of Christmas and by a whole lot of jobs that I had to finish before then, and I wasn't able to calculate accurately enough how much time I had to spare. Anyway, after a week I realised that I needed to be realistic and declined. Looking at it another way, it had seemed initially that there was 67% chance that I would be able to take it on but 33% chance that I would have to decline; but after a week, the situation had switched around, and I realised that the game was up. (One could recalculate the situation probabilistically as 67% of zero delay plus 33% of 1 week's delay, so really I only delayed by 2 or 3 days!)

What the above episode shows is that referees are not only people but also serious workers with real motivations (a) to do their duty, (b) to help journals/conferences and authors, (c) to ensure that rubbish isn't published, and last but by no means least, (d) to find out what is going on in their field. In fact, it is the editor's job to work out in advance which category each PR is in, and then to invite PRs in an order that ensures that the paper in question is reviewed at the fastest possible rate. This involves working out the degree of match of each PR for the given paper, and also the amount of time he/she is likely to have. Unfortunately, one has to admit that the most experienced PRs have the least time for reviewing; whereas the least experienced PRs may not justify their judgements well enough and may write overly short or cryptic reviews, with the result that the latter may not actually be usable. On the other hand, even the least experienced PRs have to be given a chance or they will not improve, and clearly there has to be a training element. It also happens that nowadays so many papers are being submitted that most editors can't really know all possible PRs personally. This leaves two other possibilities: (1) to use the authors of the references in the paper as PRs, (2) to use authors of papers that come up from a keyword search of the paper in question. Whereas personal knowledge of PRs was once the favoured method, later on possibility (1) became the favoured method (albeit it could arguably result in over-manipulation by the author towards reviewers he felt would give him a clear run); but nowadays possibility (2) is taking over – to the chagrin of editors who have to work harder to sort the wheat from the chaff (to coin a phrase which I hope PRs will not take offence at!).

Well, Happy New Year, folks. To follow what the comedian Dave Allen used to say ("May your god go with you!") – may the editor's choice of PRs go with you and give you speedy, fair and informative judgements for all the papers you write.

Professor Roy Davies
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Upcoming Meetings in 2015

We have a full program of meetings arranged for 2015:

25 Mar	Student symposium, Huma Shah
6 May	Vision for human–computer interaction and virtual reality systems, Manuela Chessa and Fabio Solari
17 June	Efficient 3D representation for real time mobile systems, Zeeshan Zia and Andrew Davison
17 July	Context aware cognitive systems, Nicolas Pugeault
14 Oct	BMVA technical meeting in face analysis and synthesis, Michel Valstar and Brias Martinez
9 Dec	Visual, tactile and force sensing for robot manipulation, Lorenzo Jamone and Emre Ugur

Dr Andrew Gilbert
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Vision for Human–Computer Interaction and Virtual Reality Systems
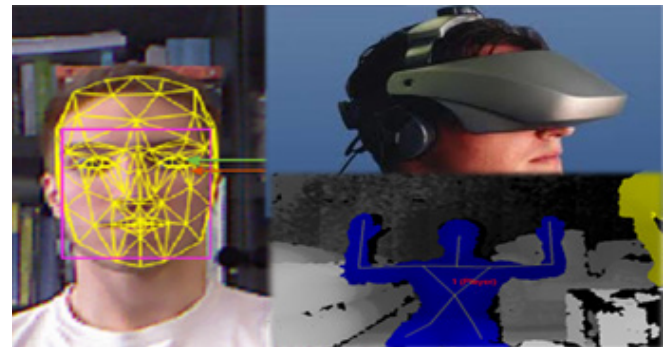
Call for Participation

One-day BMVA symposium to be held in London on Wednesday 6 May 2015.

Chairs: Dr Manuela Chessa and Dr Fabio Solari

Keynote speakers: Dr Tae-Kyun Kim (Imperial College London) and Guido Maiello (University College London)

www.bmva.org/meetings

The gap between computer vision and computer graphics is the main cause of perceptual problems in existing virtual/augmented/mixed reality techniques. Computer vision is fundamental in order to implement effective systems that allow a natural interaction of the users in virtual reality environments. Allowing people to act without experiencing the misperception issues such as the wrong perception of objects' shapes, distances, depths; and without visual stress and fatigue.

The aim of this meeting is to bring together researchers and practitioners, from both industry and academia, in all aspects of vision, which can be effectively used in virtual/augmented/mixed reality.

We are seeking papers that address the challenges of vision in virtual/augmented/mixed reality systems for human–computer interfaces including, but not limited to:

- Depth perception (from stereo and/or other cues) in virtual reality environments
- Stereoscopic rendering in virtual reality environments
- Rendering in augmented/mixed reality environments
- Misperception issues and undesired effects in 3D displays
- Ecological validity of augmented/mixed reality systems
- Human-machine interaction in virtual/augmented/mixed reality environments
- Natural human–machine interfaces based on augmented/mixed reality
- Hand/face/body recognition and tracking for human–machine interfaces
- Action and activity recognition and Eye-tracking for human-machine interfaces

Call for Participation: All those interested in presenting material at this meeting are invited to submit a summary of their talk by email to Manuela Chessa (manuela.chessa@unige.it) by 18 February 2015.

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MIUA 2015 – First Call for Papers

UNIVERSITY OF
LINCOLN

MIUA 2015 will be held at Lincoln on 15–17 July 2015.

MIUA 2015 is the 19th in the series of annual meetings dedicated to communicating research progress in image analysis applied in the medical and biomedical sciences.

Technical papers (6 pages) and review papers (8 pages) are invited on topics from across the spectrum of medical image analysis – from theory and technical advances to novel practical applications.

MIUA operates a double-blind peer review system with three reviewers evaluating each paper. All accepted contributions will be published and the full proceedings will be available at the conference and on-line. Selected papers will be invited for journal publication and prizes will be awarded for the best work.

Important dates

Paper submission open: 6 February 2015
Paper submission deadline: 23 March 2015
Conference: 15–17 July 2015

We are also pleased to announce two out of our four distinguished keynote speakers for MIUA 2015:

- Professor Brian F Hutton, University College London
- Professor Tim Cootes, the University of Manchester.

Conference chairs: Dr Tryphon Lambrou and Dr Xujiong Ye, University of Lincoln.

Further details of the conference, paper submission, scope and venue can be found at http://www.miua.org.uk/. For questions about paper submissions, academic content, sponsorships and all technical enquiries, please contact the organisers at the address below.

Dr Tryphon Lambrou and Dr Xujiong Ye
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Travel Bursaries for International Conferences

In order to encourage UK postgraduate students to present work at international conferences, the BMVA issues bursaries to help cover the travel and conference costs. A number of such bursaries, of up to £750 each, are issued annually. In return, the recipient is expected to write a report on the conference for inclusion in the newsletter, or to do equivalent work for the BMVA website as agreed with the bursaries officer.

To be eligible, you must be: (1) a student at a UK university; (2) a BMVA member; (3) presenting work at a major conference within the BMVA's remit.

For further details and an application form, see the BMVA website at: http://www.bmva.org/w/bursaries

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Sullivan Thesis Prize

Every year, the BMVA awards a prize for the best thesis out of those brought to its attention as having been examined in the previous calendar year. The prize is awarded in the name of Geoff Sullivan, who played a significant role in the early days of the BMVA.

If you are in the final stages of writing up your thesis, please consider submitting it to the BMVA's thesis archive: all the information is on the BMVA website. If you are supervising a PhD student who you think has done particularly well, please consider entering him or her for the Sullivan prize; again, the procedure is on the website.

Dr Adrian Clark
BMVA Chair
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Report on CVPR 2014

The highest ranked IEEE conference on CVPR (Computer Vision and Pattern Recognition) was held this year at Greater Columbus Convention Center in the beautiful city of Columbus (Ohio), USA. According to Google Scholar Metrics, CVPR is the venue with the highest impact factor in the domain of computer vision and pattern recognition. I was privileged to attend and present my recent research work at the event.

The main program lasted for four days (24–27 June) comprising poster presentations, keynote talks, demos, exhibitions, and social functions as well as 19 parallel workshops and 15 tutorials. The reported number of valid submissions was around 1800, from which 540 papers were accepted (104 Orals + 436 Posters), with acceptance rate 29.88%. Each day there were special tracks for oral and poster presentations as well as video spotlights and exhibitions. The tracks were well organized and everyone had the opportunity to meet experts, seniors, and people working in their own fields right in one place and time. This has led particularly the young researchers to know the latest innovations, trends, and state-of-the-art.
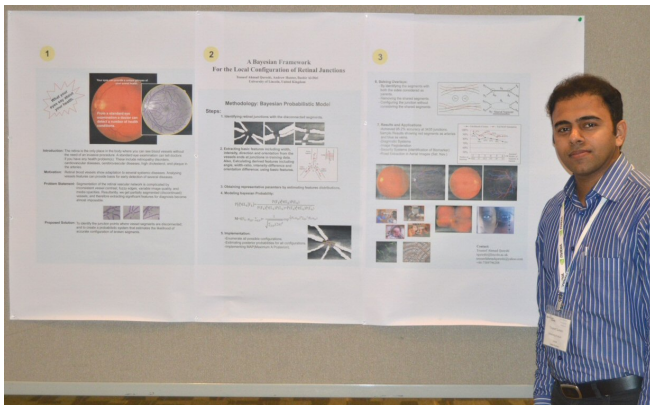
Touseef Ahmad Qureshi presenting his poster at CVPR 2014

Several companies and research groups exhibited their technical products. At the same time, they attracted job seekers by introducing their current projects, vacancies, and promotions. The companies such as Microsoft Research, Google, Amazon, NVidia, IBM were major sponsors; and their representatives were there at desks helping people know about them and to build connections. These companies and some others also have set up awards for the top 10 papers and best paper awards. In addition, a Doctoral Symposium was designed for those PhD candidates who were in their final stage of obtaining degrees. These students were asked to introduce their research work, contributions and future plans. It was extremely motivational for fresh graduates as there were interviews and hiring on the spot.

The main meeting also included two invited speakers, Dr Doris Tsao and Dr Stéphane Mallat, who gave extremely useful talks on general computer vision problems and solutions. Another innovation of CVPR 2014 was the creation of a PAMI/IJCV journal session. The goal of this session was to expose the CVPR community to high-impact journal publications that have appeared in recent years and were not previously presented at a major computer vision conference. Six recent high-impact journal papers were selected by a committee consisting of two former Editors-in-Chief of PAMI. These papers were selected from a pool of 20+ papers nominated by Associate Editors of PAMI and IJCV.

Apart from the above mentioned activities, participants had lunches, gala dinner receptions and refreshments. The CVPR registration team has also provided all the participants with booklets, flash drives consisting softcopies of program, papers and workshops, as well as T-shirts. The CVPR team guided participants for visiting Columbus's worth-seeing sites including downtown, museums, Ohio State University, German Village, Columbus Zoo, and so on.

Overall, it was a great experience of my academic life. I presented my poster with title "A Bayesian framework for the local configuration of retinal junctions" and people really appreciated my work. I am thankful to BMVA for providing me funds to cover my expenses for this trip. And I hope to attend CVPR 2015 in Boston as well as BMVC 2014 in Nottingham.

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Report on ECCV 2014

The 13th European Conference on Computer Vision was held in early September in Zurich, the largest city in the Switzerland. As you may know, the European Conference on Computer Vision is one of the top conferences in Computer Vision. It has an established tradition of very high scientific quality. From 1444 submissions, 363 were accepted (26.7%): 325 as posters (23.9%) and 38 as orals (2.8%). The conference lasted for seven days with a main technical program, 28 workshops, 8 tutorials and several technical demonstrations and exhibitions.

The main venue of ECCV 2014

There were 9 workshops in the first day of the conference. The first one 'Where Computer Vision Meets Art' attracted a lot of attention. This workshop was organized by Dr Gustavo Carneiro and Dr Alessio Del Bue and its purpose was to bring together leading researchers in the fields of computer vision, machine learning, and multimedia information retrieval, with a special emphasis on art and cultural heritage applications. The workshop started with a keynote given by James Wang from Pennsylvania State University. The talk focused on two recent research

efforts at Penn State on computerized analysis of paintings and photographic arts. After the keynote, several recent works in this area were presented, including one from the Oxford Group 'In Search of Art'. Another thing worth mentioning is that the tutorial of "DIY Deep Learning for Vision: a Hands-on Tutorial" was extremely hot, and the room was packed. Unfortunately, the author of 'Caffe', Yangqing Jia, could not come because of a visa problem.
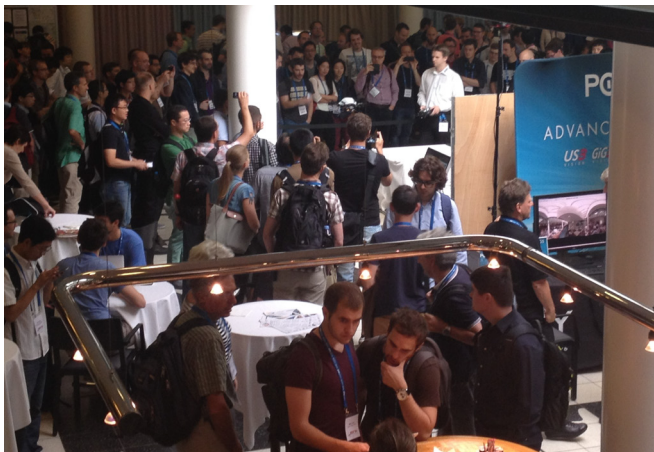
Exhibitions of advanced computer vision technology, products, and publications

The first day of the main conference started with award announcements. This year's Best Paper was awarded to Kevin Matzen and Noah Snavely for "Scene chronology" and to Jia Deng, Nan Ding, Yangqing Jia, Andrea Frome, Kevin Murphy, Samy Bengio, Yuan Li, Hartmut Neven and Hartwig Adam for "Large-scale object classification using label relation graphs"; an honourable mention was awarded to Mazz Zeiler and Rob Fergus for "Visualizing and understanding convolution neural networks". Then, there were two oral sessions followed by a poster session in the afternoon. The last oral session in the first day was about Learning and Inference. Interestingly, all the works in this session were about deep learning, which is one of the hottest areas in current computer vision. The first day ended with an impressive welcome reception in the Kongresshaus in Zurich.

Researchers from University of Bath presenting their posters

The following three days of the main conference opened with poster session and then oral sessions. Each poster session in ECCV 2014 lasted nearly 3 hours, which gave people enough time to present their works and to communicate. I presented my poster "Learning graphs to model visual objects across different depictive styles" in the last poster session. During the presentation, we described a way to model visual classes using a graph with multiple labels on each node; weights on arcs and nodes indicated the relative importance (salience) to the object description. Visual class models can be learned from examples from a database that contains photographs, drawings, paintings etc. The presentation went quite well and gave me a great opportunity to discuss the topic with other researchers and obtain valuable and constructive feedback from them.

Outside the ETH main hall, people are waiting for the conference dinner

The conference dinner was held in the campus of ETH on Wednesday night. The dinner offered traditional Swiss food as well as Asian food. However, the most popular food was still the BBQ, and beers. People enjoyed the food and had a nice social that night. The dinner lasted until midnight.

The main conference closed on Thursday but there was still a one-day workshop on Friday. The 'ImageNet Large Scale Visual Recognition Challenge (ILSVRC)' attracted a lot of attention, since it is one of the most challenging competitions in the contemporary object recognition area.

Outside the ECCV 2014 main venue, the Zurich Kongresshaus

As one of the biggest conferences in computer vision, this year's ECCV was well organized and was successful in all aspects, both the technical program and social events.

More information about this year's ECCV is available on the conference website: http://eccv2014.org/

The conference venue was located at the conference centre in Zurich and workshops were held in the ETH. The city itself was friendly and welcoming but very expensive. Do you want more beer with less money? Don't worry: the next ECCV will take place in Munich, Germany.

Finally, I am grateful for the generous support from the BMVA which enabled me to travel to such a successful conference.

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Report on MICCAI 2014

In 1998, the very first Medical Image Computing and Computer Assisted Intervention (MICCAI) meeting took place in the Massachusetts Institute of Technology (MIT), Boston, merging CVRMed (Computer Vision, Virtual Reality and Robotics in Medicine), MRCAS (Medical Robotics and Computer Assisted Surgery) and VBC (Visualization in Biomedical Computing).
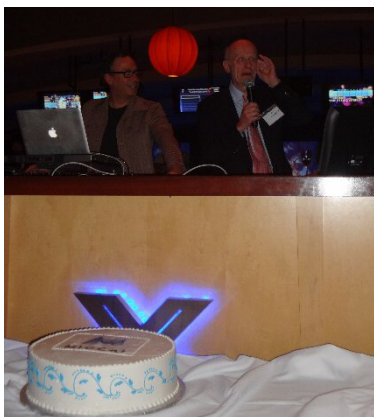
First MICCAI Society president Alan Colchester celebrating the 16 years of the MICCAI meeting in Boston in September. The MICCAI Society also celebrated its tenth anniversary at the Boston meeting (photo courtesy of Ana Namburete).

16 years later, the 17th International Conference on MICCAI came back to the location of its very first meeting at MIT, on 14–18 September 2014. From this year's record number of 862 submissions, 253 papers were accepted (29% acceptance ratio) to the main conference. Following the recent MICCAI tradition, all accepted papers were presented as posters. From these, 36 papers were selected for podium presentation (4%) in single-track plenary sessions. In addition to the main conference a 2-day programme of 25 workshops, 8 computational challenges and 3 tutorials took place in the MIT Student Centre and Stata Centre. This year, for the first time, an Educational Challenge was introduced.

A conference keynote was given by Professor Neville Hogan, Professor of Brain and Cognitive Sciences and Mechanical Engineering, and Director of the Newman Laboratory for Biomechanics and Human Rehabilitation at MIT. In his talk "Physical Interaction: the Key to Therapeutic Robotics", he described how controlling physical interaction between humans and machines is the key to applying robotic technology to deliver therapy to aid recovery after neurological disease, replace limb function following amputation, and provide assistance to restore function. Despite challenges such as the fact that physical contact can severely destabilize robots, he showed exciting clinical evidence that robot therapy is both effective and cost-effective, mainly through his successful project on robot-aided wrist rehabilitation after stroke. In general, his presentation reviewed how machine mimicry of natural control provides the gentleness required for robotic therapy and enables seamless coordination of natural and prosthetic limbs. In the end, he argued that a prerequisite for success in these applications is a quantitative knowledge of the human motor control system.

(Kresge) Auditorium of the main conference (photo courtesy of Ana Namburete)

Ray and Maria Stata Center for Computer, Information, and Intelligence Sciences (photo courtesy of Benjamin Irving)

On a personal note, although the main conference was not rich in echocardiography (my field of study) presentations, or ultrasound, I found that the workshops and challenges filled that gap very effectively with state of the art research on this imaging modality. For the first time ever, a moderate database of 3D cardiac ultrasound images, and the associated endocardial manual references based on the analysis of three different experts, were made available online to the community through the Challenge on endocardial three-dimensional ultrasound segmentation (CETUS). While in computer vision, challenges have been recognised as a good way to benchmark methodology performance, this concept is less established in medical image computing – in part due to it being harder to get approval for release of large datasets (ethics). I presented a poster in the Machine Learning and Medical Imaging (MLMI) Workshop, but it was the feedback on my oral

presentation "Endocardial segmentation using structured random forests in 3D echocardiography" and participation in the CETUS challenge that taught me a lot about the best approaches in the field to the problem of endocardial segmentation. I particularly enjoyed talking to Challenge participants about the possibility of combining aspects of my own work with others to try and develop a future solution that may outperform the current leading CETUS solution.

DPhil students and postdocs representing the BioMedIA laboratory from the Institute of Biomedical Engineering, University of Oxford (MIT Kresge Auditorium in the background)

The conference concluded with the traditional awards ceremony. The prestigious MICCAI Society Enduring Impact Award was awarded to Professor Terry Peters for pioneering contributions in CT imaging and in bringing computer-assisted intervention techniques into clinical practice, particularly for the heart, brain, spine and abdomen. The Medical Image Analysis Best Paper Award was awarded to Tobias Heimann et al. for their article entitled "Real-time ultrasound transducer localization in fluoroscopy images by transfer learning from synthetic training data". The Young Scientist Publication Impact Award was awarded to Dr Samuel Gerber et al. for the article entitled "On the manifold structure of the space of brain images", a paper cited over 50 times, including articles in IEEE TMI, Medical Image Analysis, NeuroImage, PLoS One, and the Journal of Neuroscience Methods. Finally, out of the five interesting papers that were awarded the Student Best Paper Awards, my favourite was the article entitled "Auto localization and segmentation of occluded vessels in robot-assisted partial nephrectomy" by Alborz Amir-Khalili et al. This paper makes clever use of the Eulerian phase-based video magnification framework recently published by Neal Wadhwa et al. in SIGGRAPH 2013, to perform automatic localization and labelling of occluded vasculature through assignment of segmentation labels based on identifying responses of regions exhibiting temporal local phase changes matching the heart rate frequency.

After an amazing week in sunny Boston, it was time to return to cloudy Oxford. I am very grateful to the BMVA for providing a travel bursary which enabled me to register and attend this conference.

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ICPR 2014 Report

The 22nd International Conference on Pattern Recognition (ICPR) is held every two years. It aims to rotate around the world, roughly in North America, Europe and Asia. The 2014 conference was in Stockholm, held in the relatively new and attractive Waterfront conference centre. This is a relatively large conference, with more than 800 delegates. There were about 750 papers presented (out of 1400 submitted), with about a 1:3 ratio of oral to poster. There were up to 5 parallel oral presentations as well as posters in the breakout areas. The main themes of the tracks were: 'Computer Vision', 'Pattern Recognition and Machine Learning', 'Image, Speech, Signal and Video Processing', 'Document Analysis, Biometrics and Pattern Recognition Applications', and 'Biomedical Image Analysis'. Of particular note, this was the first time that China had the most papers as well as delegates (followed by the USA, with the UK in the top 10).

One highlight of the conference was the Welcome Reception, which was held in the Stockholm City Hall. As well as being a stunning building, this is also the hall where the Nobel Prize dinners are held. The key word is: "Inspiring".

Plenary Talks

While there were many excellent talks, the highlights of the conference were the plenary talks. These were excellent – well presented, interesting and novel ideas, as well as some overview of the general subject area. You can read more about these at the ICPR web site (www.icpr2014.org/plenary-speakers.htm), but you can see the quality of the speakers and their topics:

- Jitendra Malik (The three *R*s of computer vision: recognition, reconstruction and reorganization)
- Arun Ross (Biometrics: from pattern recognition to data privacy)
- Kenichi Kanatani (Statistical optimization for geometric estimation: minimization *v*. non-minimization)
- Mark Girolami (putting the scientist in the loop – accelerating scientific progress with interactive machine learning)
- Nikos Paragios (Discrete visual perception)
- Fei-Fei Li (learning features and parts for fine-grained recognition)
- Stan Z Li (deep metric learning for person re-identification).

Workshops

Another highlight of the conference is the many workshops (11), tutorials (9) and contests (4) that are hosted the day before the main conference starts. I organised one of the workshops (Visual observation and analysis of Vertebrate and Insect Behavior) and also attended the last 1/3 of another (Computer Vision for Analysis of Underwater Imagery). Although the workshop presentations are not always of the same standard as the main conference, they are much more focused. You can get a good feeling of the

state of the art and the sorts of research questions that people are addressing after 10–15 talks on closely related topics.

Conference Dinner

What I remember most about the Conference Dinner was the compère and the musical group. Oh yes, there was also the food (good), the wine (enough), the awards for best papers and posters (see www.icpr2014.org/awards.htm), the welcoming of the new IAPR Fellows (see www.iapr.org/fellowsandawards/index.php?ar=2), the announcement of the new IAPR officers (including Sweden's Ingela Nyström as the new President – see www.iapr.org/news/), the announcement of ICPR 2016 (Cancun) and ICPR 2018 (Beijing).

Now – about the dinner: the compère was none other than Carl von Linné, aka Linnaeus, the famous Swedish botanist who introduced the biological species naming scheme. Carl (who really did look like the portraits of the real Carl), introduced the main stages of the dinner, interspersed with telling some of the history of Linnaeus and his students. These students seemed to have travelled the world, which gave Carl a chance to recognise many of the nationalities represented at ICPR. Most delegates appreciated this (and some mild teasing occasionally). The final entertainment was by a Swedish pop group (whose name I did not write down), who almost became Sweden's Eurovision entry a few years ago. The colourful costumes, light-hearted tunes and kilometres of long blond hair gave us a real Swedish treat.

Stockholm

Stockholm is a lovely city, clean and fresh with the air from the nearby archipelago. I had an extra day after the conference to do a little sightseeing and it was worth the extra time. [Note: How many times have you travelled somewhere, only to stay in a hotel that looks the same as any other hotel, eaten with work colleagues at workplace cafeterias? And then returned to the airport, whose only distinctive feature is the local food and crafts shop in the Duty Free area? Recommendation: always try to spend an extra day and see some of the host country.] For me the highlight was the Vasa Museum (recovered 1628 warship that sank during a turn, essentially because it wasn't buoyant enough, and they left the gun ports open on the low side.). The Vasa had its own museum, and it was interesting to learn a lot about the social context at the time of the Vasa. Another highlight was the Nobel Prize museum in the middle of the Gamla Stan (old town) area. And just walking around the city. The food was a little expensive, but I found if you looked for local restaurants it was tasty and not too expensive.

Professor Bob Fisher
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The BMVA in the IAPR

The Relationship between BMVA and the IAPR

The International Association of Pattern Recognition (IAPR) is an umbrella association for a number of national scientific organisations like the BMVA. Each country normally has only one affiliated national organisation, and the BMVA is the UK's member organisation. At the moment, the IAPR has 45 affiliated countries, with new ones being added as their local scientific organisations reach a sufficiently large size. Edwin Hancock and Mark Nixon are the BMVA's representatives on the IAPR Governing Board.

The BMVA pays an annual subscription to the IAPR, from which the BMVA and its members get a variety of benefits. The benefits that most BMVA members will notice directly are the IAPR newsletter and discounts at IAPR sponsored events. The most notable of these is the biannual Int. Conf. on Pattern Recognition (ICPR), where there was about a 20% discount.

What the IAPR does

The IAPR web site says: "The aims of IAPR are to promote pattern recognition and the allied branches of engineering together with the related arts and sciences, to advance international co-operation in the field of interest to stimulate research, development, and the application of pattern recognition in science and human activity, to further the dissemination and exchange of information on pattern recognition in the broad sense, and to encourage education in all aspects of the field of interest". This is a good summary of its mission.

Most BMVA members will know of the ICPR conference that happens every 2 years. The IAPR sponsors this conference, and selects the countries that will host the next conferences, in this case Mexico (Cancun) in 2016 and China (Beijing) in 2018. The IAPR also sponsors many other conferences, but does not take a direct hand in the selection and management of the conference. The IAPR sponsors three reputable journals: Pattern Recognition Letters, Machine Vision & Applications, and the Int. Journal on Document Analysis and Recognition, as well as the IAPR newsletter.

In order to encourage and reward contributions to the IAPR and the wider research community, the IAPR has two prizes and also recognises researchers as "Fellow of the IAPR". The most notable awards are the King-Sun Fu award (outstanding technical contribution to the field of pattern recognition), JK Aggarwal Prize (young scientist who has made a substantial contribution), and the P Zamperoni Award (best student paper at ICPR). The Fellow award recognises "distinguished contributions to the field of pattern recognition and to IAPR activities". The UK has quite a few IAPR Fellows (Cootes, Davies, Fairhurst, Fisher, Fitzgibbon, Hancock, Illingworth, Kittler, Li, Mirmehdi, Murtagh, Nixon, Petrou, Taylor, Wang, Wilson – with apologies for any people I have missed).

To stimulate the development of specialist topics, the IAPR sponsors 16 Technical Committees (e.g., Statistical Pattern Recognition Techniques, Computational Forensics, Graph Based Representations, etc.), which organise web pages, newsletters, workshops, etc.

Finally, the IAPR sponsors the development of some resources of benefit to the community, the most notable of which is the Education Committee's collection of resources for Educators, Researchers and Students (homepages.inf.ed.ac.uk/rbf/IAPR/) which I initiated some years ago as the Chair of the Education Committee.

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BMVC 2015

7–10 September 2015, Swansea, UK
http://bmvc2015.swan.ac.uk

The British Machine Vision Conference (BMVC) is one of the major international conferences on computer vision and related areas. It is organised by the British Machine Vision Association (BMVA).

The 26th BMVC will be held at Swansea University Singleton Campus, 7–10 September 2015. The University Singleton Campus is set in a rolling parkland overlooking the majestic sweep of Swansea Bay, the start of the famously dramatic Gower coastline comprised of twenty-one bays and coves.

BMVC2015 is a high quality single-track conference, comprising oral presentations and poster sessions (with oral acceptance <10% in the last 6 years). The conference features two keynote presentations and a conference tutorial, and has associated workshops on the last day of the conference, including a PhD student workshop.

Topics of interest

Topics include, but are not limited to:

- Statistics and machine learning for vision
- Stereo, calibration, geometric modelling and processing
- Face and gesture recognition
- Early and biologically inspired vision
- Motion, flow and tracking
- Segmentation and grouping
- Model-based vision
- Image processing techniques and methods
- Texture, shape and colour
- Video analysis
- Document processing and recognition
- Vision for quality assurance, medical diagnosis, etc.
- Vision for visualisation, interaction, and graphics
- Object detection and recognition
- Shape-from-X

- Video analysis and event recognition
- Illumination and reflectance

Conference tutorial

BMVC 2015 features a half-day conference tutorial on 7 September. The tutorial is particularly beneficial to research students and early career researchers who are working in this field. We are honoured, with Chris Bishop, to have such a prominent researcher in the field of pattern recognition and machine learning to deliver the tutorial.

Professor Christopher Bishop

Chris Bishop has a BA in Physics with First Class Honours from Oxford, and a PhD in Theoretical Physics from the University of Edinburgh with a thesis on quantum field theory supervised by David Wallace and Peter Higgs. In 1998 he joined the Microsoft Research Laboratory in Cambridge where he became Deputy Managing Director, and later the Chief Research Scientist. He is a Partner in Microsoft, and is head of the Machine Learning and Perception group. In 2010 he was awarded the accolade of Distinguished Scientist, representing the highest level of research distinction within Microsoft, and was the first person in Europe to hold this title. At the same time as he joined Microsoft Research, he was elected to a Chair of Computer Science at the University of Edinburgh where he is a member of the Institute for Adaptive and Neural Computation in the School of Informatics. He is also a Fellow of Darwin College, Cambridge. He has been elected Fellow of the Royal Academy of Engineering, and Fellow of the Royal Society of Edinburgh, and has been awarded two Honorary Doctorates of Science degrees. His research interests include probabilistic approaches to machine learning, as well as their applications in industry, commerce, and healthcare.

Keynote speakers

BMVC invites two leading researchers in the field to present their work at the conference. We are grateful to the following speakers who have agreed to give keynote lectures at the conference.

Professor Ron Kimmel

Ron Kimmel is a Professor of Computer Science at the Technion where he holds the Montreal Chair in Sciences. He held a post-doctoral position at UC Berkeley and a visiting professorship at Stanford University. He has worked in various areas of image and shape analysis in computer vision, image processing, and computer graphics. Kimmel's interest in recent years has been non-rigid shape processing and analysis, medical imaging and computational biometry, numerical optimization of problems with a geometric flavour, and applications of metric geometry and differential geometry. Kimmel is an IEEE Fellow for his contributions to image processing and non-rigid shape analysis. He is an author of two books, an editor of one, and an author of numerous articles. He is the founder of the Geometric Image Processing Laboratory and a founder and advisor of several successful image processing and analysis companies.

Professor Kristen Grauman

Kristen Grauman is an Associate Professor in the Department of Computer Science at the University of Texas at Austin. Her research in computer vision and machine learning focuses on visual search and object recognition. Before joining UT-Austin in 2007, she received her PhD in the EECS department at MIT, in the Computer Science and Artificial Intelligence Laboratory. She is an Alfred P Sloan Research Fellow and Microsoft Research New Faculty Fellow, a recipient of NSF CAREER and ONR Young Investigator awards, the Regents' Outstanding Teaching Award from the University of Texas System in 2012, the PAMI Young Researcher Award in 2013, the 2013 Computers and Thought Award from the International Joint Conference on Artificial Intelligence, and a Presidential Early Career Award for Scientists and Engineers (PECASE) in 2013. She and her collaborators were recognized with the CVPR Best Student Paper Award in 2008 for their work on hashing algorithms for large-scale image retrieval, and the Marr Best Paper Prize at ICCV in 2011 for their work on modeling relative visual attributes.

Paper submission

Authors are invited to submit full-length high-quality papers in image processing and machine vision. Papers covering theory and/or application areas of computer vision are invited for submission. Submitted papers will be refereed on their originality, presentation, empirical results, and quality of evaluation. All papers will be reviewed doubly blind, normally by three members of our international programme committee. Please note that BMVC is a single-track meeting with oral and poster presentations. Paper submission instructions are available at the conference website:
http://miua2012.swansea.ac.uk
http://bmvc2015.swan.ac.uk/?services=call-for-papers

Workshop proposals

Proposals for workshops to be held in conjunction with the conference are solicited. Workshops will take place on the last afternoon of the conference on Thursday 10 September. The workshops are intended to be half-day events and to provide opportunities for in-depth discussions of focused topics, technical issues, or specific applications of computer vision and pattern recognition. Both established topics and new trends in related areas are welcomed. Proposals should be submitted by email to bmvc2015@swansea.ac.uk by Friday 20 February 2015. Details can be found at http://bmvc2015.swan.ac.uk/?p=2227

7th BMVC workshop

The 7th BMVC Student Workshop will take place on Thursday 10 September 2015. This workshop has become a regular feature of BMVC. It gives students in computer vision an opportunity to network and start collaborations at an early stage in their research careers. The workshop will be a half-day, single-track event. Registration for this workshop is free for all UK students and BMVC registered participants.

Students studying in the UK are invited to submit full-length high-quality papers of which the main author is a student. All papers will be reviewed and selected for either oral or poster presentation. All accepted papers for the workshop will be digitally published in the USB stick provided at the conference and on-line at the BMVA website

Sponsorship information

Industrial companies are welcome to sponsor this event. BMVC regularly attracts about 200 vision researchers and engineers from around the world (>75% contributing authors outside UK in recent years). It provides an excellent platform for global networking, advertisement and recruitment in vision engineering. Sponsorship details, including different sponsorship packages, can be found at the conference website:
http://bmvc2015.swan.ac.uk/?p=2231

Important dates

Submission deadline:	Friday 24 April
Author notification:	Friday 03 July
Early registration:	Friday 24 July
Late registration:	Friday 07 August
Conference tutorial:	Monday 07 Sept
Main conference:	8–10 Sept

Workshop related dates

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Proposal deadline:	Friday 20 February
Notification:	Friday 6 March
Camera-ready deadline:	Friday 17 July
Workshop registration deadline:	Friday 7 August
Workshop meetings:	Thursday pm 10 Sept

BMVC 2015

Conference chairs

Xianghua Xie, Swansea University, UK
Mark Jones, Swansea University, UK
Gary Tam, Swansea University, UK

Dr Xianghua Xie
Swansea University
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Surgical Vision and Biophotonics – Meeting Report
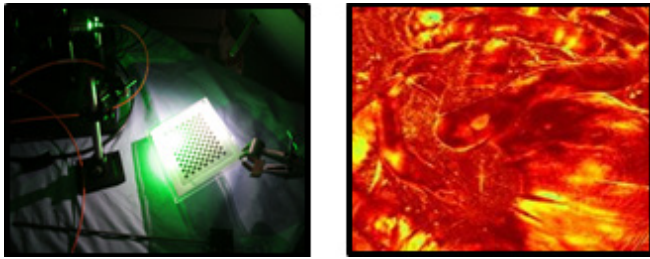
One-day BMVA Technical Meeting held at the British Computer Society on 15 October 2014.

Chairs: Danail Stoyanov (UCL), Dan Elson (Imperial)

With more than 40 attendees and 14 presenters, the meeting was split into 4 sessions with one keynote presentation at each session. The speakers explored state-of-the-art developments related to medical imaging, computer vision and robotic systems for image-guided surgery. There were presentations from academics from the UK, as well as figures in the field from across Europe. The audience was similarly representative of the vision and biophotonics communities.

The day started with a welcome by the chairs, Danail Stoyanov and Dan Elson. Lena Maier-Hein (DKFZ, Germany) gave the first keynote, an interactive presentation on the achievements and open issues in computational endoscopy. Markerless augmented reality (AR) in minimally invasive surgery (MIS) was discussed and a performance evaluation study of approaches for 3D reconstruction was presented. The talk also focused on the challenges of multispectral imaging in endoscopy and context aware visualisation. The idea of crowdsourcing for annotation of medical image data was introduced. Neil Clancy (Imperial College London) presented his work on the use of multispectral imaging to measure tissue blood oxygenation and generate oxygen saturation maps during small bowel anastomosis. The discussion on multispectral imaging continued with the talk by Geoff Jones (University College London) who presented his work on the deblurring of multispectral images of dynamic tissue based on stereo vision to estimate deformation fields to be combined with a resampling blur model.

The second session started with the keynote by Adrien Desjardins (UCL) on the use of optical ultrasound transducers for imaging and medical device guidance. The talk highlighted the need to bring together medical devices and imaging systems and presented optical ultrasound systems and device localisation approaches exploiting the interaction between light and sound with novel fabrication and materials. Matt Clarkson (UCL) presented an image-guided system for laparoscopic liver surgery based on intra-operative dense stereo reconstruction, registration with pre-operative CT data and augmented visualisation in a rigid surgical environment. The mechanical design and remote control of a robotic trans-oesophageal ultrasound probe was presented by Shuangyi Wang (King's College London). The last talk of the session was given by Stamatia Giannarou (Imperial) on the detection and tracking of affine-invariant anisotropic features on the tissue surface and their application for modelling of tool-tissue interaction, deformable 3D reconstruction and content-based representation of the surgical environment.

The lunch break was followed by Gastone Cuiti's (The BioRobotics Institute, Italy) keynote on robotic endoscopic vectors for focused action and therapy. The talk focused on the description of state-of-the-art robotic systems for endovascular and endoluminal surgery, including wireless capsule endoscopy with magnetic guidance. Robotic platforms such as the ARAKNES, developed as part of European research projects were also presented. Philip Pratt (Imperial) presented his work on multimodal reconstruction fusing pre-operative CT, intra-operative ultrasound and laparoscopic data for tumour identification during image-guided interventions. The generation of flat 2D maps of the left atrium was explained by Rashed Karim (KCL) to guide MRI compatible robotic catheter systems during ablation procedures. The session closed with the talk by Jianyu Lin (Imperial) on a miniaturized self-calibrated structured light system for 3D reconstruction in MIS where the camera-light calibration is automatically estimated on the fly.

The last session of the day kicked-off with the keynote by Joao Barreto (P3D and University of Coimbra, Portugal). The talk presented a body GPS system in the Operating Room focusing on approaches for visual odometry and 3D reconstruction, radial distortion correction and automatic camera calibration from a single image. Sebastian Bodenstedt (Karlsruhe Institute of Technology, Germany) presented his work on stereo-endoscopy and organ mosaicking for the estimation of 3D organ models and its application on image-based measurement of the bowel size and registration to pre-operative data. The final oral presentation of the day was delivered by Francois Chadebecq (Université Blaise Pascal – Clermont-Ferrand II, France) who used the Infocus-Breakpoint to solve the scale ambiguity in monocular vision and measure the size of regions with neoplasia in colonoscopy.

Overall, it was a very well organised technical meeting with high quality and inspiring talks which effectively revealed the state-of-the-art in surgical vision and biophotonics. The lunch and coffee breaks encouraged networking and research discussions between the attendees. I would definitely recommend these one-day technical meetings and hope more meetings of similar standard will follow.

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ICDP 2015

Call for Papers

The 6th International Conference on Imaging for Crime Detection and Prevention (ICDP-15) is being organised by IET's Vision and Imaging Network, and will be held at QMUL on 15–17 July 2015.

Conference chairs

Sergio A Velastin, Universidad de Santiago de Chile
Ebroul Izquierdo, QMUL
Petros Daras, CERTH-ITI, Greece
Tomas Piatrik, QMUL
Stelios Papakonstantinou, Neuro Public, Greece

Aims and scope

Crime and anti-social behaviour have a significant cost for society and business alike. Just in the UK anti-social behaviour alone accounts annually for around £3.4 billion of taxpayers' money with incidents of graffiti and vandalism estimated to cost around £600 million p.a. Surveillance systems of all kinds are thus extensively deployed in public and private locations to deter, prevent and control. Recent years have also seen an increased awareness on the vulnerability of public spaces to attacks. However, there are serious limitations to the use of conventional monitoring systems where human operators are asked to survey a large number of cameras or go through enormous amounts of recorded material for forensic investigations. Computer-based technologies are increasingly becoming researched in what is now known as video analytics, propelled by advances in processing power, embedded computing, IP-networking technologies, volume storage, cheap cameras, etc. The realisation of such advances into working systems can have a major impact on Society and also on individual liberty. This conference follows the successful Intelligent distributed surveillance systems events, IDSS 2003 and 2004, and ICDP 2005–2013 to bring together researchers, industry, end-users, law-enforcing agencies and citizen groups to share experiences and explore areas where additional research and development are needed, identify possible collaborations, and consider the societal impact of such technologies.

Full papers are invited on all aspects of Imaging Surveillance technologies, from academia, industry, NGOs and others, to be selected for oral presentations or posters through a peer-review system (see also: http://www.icdp-conf.org). An indicative, not exclusive, list of relevant topics is:

- Surveillance systems and solutions
- Multi-camera systems
- Information fusion (e.g. From visible and infrared cameras, microphone arrays)
- Learning systems, cognitive systems engineering and video mining
- Robust computer vision algorithms (24/7 operation under variable conditions, object tracking, multi-camera algorithms, behaviour analysis, scene segmentation)
- Human machine interfaces, human systems engineering and human factors
- Wireless communications and networks for video surveillance, coding, compression, authentication
- Metadata generation, video database indexing, searching and browsing
- Embedded systems, surveillance middleware
- Gesture and posture analysis and recognition
- Biometrics (including face recognition)
- Forensics and crime scene reconstruction
- X-Ray and Terahertz scanning
- Case studies, practical systems and testbeds
- Data protection, civil liberties and social exclusion.

Accepted papers will be published on the IET's Digital Library, indexed by Inspec, only if at least one author registers and presents the work. Authors of exceptional papers may be invited to submit extended versions for possible publication in IET Computer Vision, IET Image Processing or IET Biometrics. There are delegate fee discounts for authors, students and members of the IET and sponsoring organisations.

Key dates

Receipt of full papers (max. 6 pp.
    in the prescribed PDF format): 15 April 2015
Notification of acceptance: 25 May 2015
Receipt of camera-ready papers: 15 June 2015

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