BMVA News

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

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http://www.bmva.org/

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 June 2013.

Contents

Editorial: *The Times They Are a-Changin'*

As humans, we are very aware of the present, but for times past our memories become more and more fuzzy, though some of us seem to have the facility of remembering what happened when we were in our prams. [2] However, such memories are likely to be amplified and even grossly distorted by what we were told, or what we reconstructed from later evidence – after all, what frame of reference can a baby have for remembering anything in adult terms? Similarly, looking into the future, our thoughts, analyses and prognostications also get more and more fuzzy, as we can only extrapolate from present-day knowledge. Indeed, major events, such as the unravelling of the structure of DNA in the early 1950s, have huge knock-on effects, in that instance hitting both medicine and criminal detection – so much so that some 'perfect murders' have been found to be far from perfect, more than 30 years after they were carried out.

Be all this as it may, it is easy to forget even the early days of computer pattern recognition. In fact, I recall having had great difficulties in getting started and of finding people of like mind. First, there were no specific vision journals and papers were published in all sorts of seemingly random journals, conferences and meetings; I even had to join a cybernetics society in order to find people who were thinking about pattern recognition as I was. However, after 2 or 3 years in the wilderness I

[1] 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.

[2] In fact, I am far from being an example of this, and can scarcely remember what happened before I was six: not being especially deficient in my present memory capabilities, I put this down to suppressing those of the awful war years, with the sirens making us get up in the night to go to the air-raid shelter – an all too real memory for my parents.)

bumped into Mike Duff's group of people who were shortly to take the name "British Pattern Recognition Association" (BPRA), which survived for over a decade until it metamorphosed into the BMVA. In fact, Mike Duff did so much for the UK vision community that it is no accident that shortly after he retired he became our very first Distinguished Fellow (2000). In those days the growth of the UK vision community was close to exponential, but by now BMVA membership is fairly static at around 500. Actually, the appearance of a static figure is probably misleading, as student members number 50+ per year (as we can deduce from the BMVA Summer School attendance), and many are going out into the world as vision practitioners, so while BMVA membership may be static, the whole UK vision community must still be expanding at a healthy rate.

Returning to my earlier point, the journal in which the greatest percentage of vision-related papers appeared in the 1950s was almost certainly *IEEE Trans. Electronic Computers* (EC, 1953-). This was followed by *Pattern Recognition* (PR, 1968-), and soon after by *Computer Graphics Image Processing* (CGIP, 1972-), later by PAMI (1979-), then by *Pattern Recognition Letters* (PRL, 1982-) and *Image Vision Computing* (IVC, 1983-). It is interesting seeing the more relevant targeted titles gradually appearing, and by the late 1980s there was no difficulty in finding suitable journals in which to publish. It is also salutary that over this whole period, journals such as *Electronics Letters* (EL, 1965-) were accepting vision papers (grouping them mainly under the 'image processing' label), and now these are a regular inclusion. However, what was to happen in the 1980s and 1990s was that some journals were to hone themselves even more to the popularity and importance of vision – CGIP's title changing to *Computer Vision Graphics Image Processing* (CVGIP, 1983-) and quite soon splitting into two journals: CVIP: GMIP (1991-) and CVIP: IU (1991-), whose titles were later honed to *Graphical Models* and *CV Image Understanding*. Another journal which ended up with the title *Imaging Science Journal* (ISJ, 1997-) started life as the *Journal of Photographic Science* (1953-), while *Real-Time Imaging* (RTI, 1995-2005) became *Real-Time Image Processing* (RTIP, 2007-), though that was more because it was taken over by a different publisher than because of any real change of content.

Also noticeable is that many journals expanded their scope without changing their titles – PR, PRL and PAMI being amongst these: naturally, there is a tension between losing an old clientele and gaining a new one, especially for an old, trusted title. In fact, the concepts of pattern recognition and image processing-based vision are subject to severe overlap, but the underlying

(*continued on p.12*)

Reconstructing a Dynamic World

This one-day BMVA technical meeting will take place in London, UK on 10 July 2013.

http://www.bmva.org/meetings

Chairs: Chris Russell and Lourdes Agapito

The aim of this meeting is to bring together researchers and practitioners, from both industry and academia, interested in any aspects of 3D reconstruction. Submissions are welcome on any aspect of reconstruction, or supporting areas, including but not limited to:

- 4D capture
- Dataset acquisition
- Learning or motion-transfer based methods
- Motion segmentation
- Multi-view Reconstruction of dynamic scenes
- Non-rigid Structure from Motion
- Optic flow and feature tracking
- Real-time 3D systems
- Shape-from-X
- Structure from Motion.

Call for Participation

Please submit an extended summary of around one page A4. Contributions should be sent as PDFs to Chris Russell (chrisr@eecs.qmul.ac.uk) before 3 May.

Andrew Gilbert
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5th International Conference on Imaging for Crime Detection and Prevention (ICDP-13)

This conference is organised by IET's Vision and Imaging Network, and will take place in London on 16–17 Dec 2013.

Note that this is a BMVA co-sponsored event, so BMVA members may attend at IET member rates.

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 £3.3 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 being increasingly deployed in public and private locations serving as deterrence and/or for information gathering. World events have once again highlighted 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 with a wide geographical coverage or go through enormous amounts of recorded material. Computer-based technologies are increasingly becoming researched in what is becoming popularly known as video analytics, propelled by recent advances in processing power, fixed and wireless IP-networking technologies, volume storage, cheap cameras, etc. The realisation of such advances into working systems can have a major impact on society but also on individual liberty. This conference follows the successful IDSS (Intelligent Distributed Surveillance Systems) events held in 2003 and 2004 and ICDP 2005, 2006, 2009, and 2011 to bring together researchers, industry, end-users, law-enforcing agencies and citizens groups to share experiences and explore areas where additional research and development are needed, identify possible collaboration 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 but not exclusive list of relevant topics is:

- Biometrics (including face recognition)
- Case studies, practical systems and test-beds
- Data protection, civil liberties and social exclusion issues
- Embedded systems, surveillance middleware
- Forensics and crime scene reconstruction
- Gesture and posture analysis and recognition
- Human machine interfaces, human systems engineering and human factors
- Information fusion (e.g., from visible and infrared cameras, microphone arrays, etc.)
- Learning systems, cognitive systems engineering and video mining
- Metadata generation, video database indexing, searching and browsing
- Multi-camera systems
- Robust computer vision algorithms (24/7 operation under variable conditions, object tracking, multi-camera algorithms, behaviour analysis and learning, scene segmentation)
- Surveillance systems and solutions (system architecture aspects, operational procedures, usability, scalability)
- Wireless communications and networks for video surveillance, video coding, compression, authentication, watermarking, location-dependent services
- X-ray and terahertz scanning.

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The Annual BMVA Summer School

The annual BMVA Summer School is running again this year at the University of Manchester on 8–12 July.

Ii is intended for first-year PhD students – but other researchers at an early stage in their careers have found it useful as well. In fact, anyone who really wants to attend is welcome! Despite the title, students from non-UK universities are also welcome.

The format is an intensive week of lectures and lab sessions, covering a wide range of topics in Computer Vision and Digital Image Computing. Lecturers are researchers from the most active Computer Vision research groups in the UK.

The summer school website is now online, and further program details and costs will be posted there as soon as they are finalised.

Summer school website:

http://personalpages.manchester.ac.uk/staff/carole.j.twining/bmva/

BMVA website: http://www.bmva.org/

Some quotes from delegates who attended a recent Summer School: "Nice overall atmosphere to get in touch with people working in a similar/related field". "Lecturers did a very good job in bringing the topics across". "Thanks for organizing! I've met cool people and learnt a lot". "The organisation was great, flawless, and the staff were very nice and helpful"

In addition to the academic content, the Summer School provides a networking opportunity for students to interact with their peers, and to make contacts among those who will be the active researchers of their own generation.

Hope to see you all in Manchester!

Carole Twining
University of Manchester
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MIUA 2013

The Medical Image Understanding and Analysis Conference (MIUA 2013) will be held in Birmingham on 17–19 July 2013.

http://www.miua.org.uk

Extended submission deadline: 25 March 2013

MIUA 2013 is the 17th in the series of annual meetings dedicated to communicating research progress in image analysis applied in the medical and biomedical sciences. It 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 will be published in the on-line journal Annals of the BMVA.

Student bursaries

We are pleased to announce that BMVA will sponsor six student bursaries awarded to the best accepted student papers. Each bursary covers registration fee only.

Early-bird student registration fee is £130 which includes access to all the conference sessions, a copy of the conference proceedings, the workshop (17th July), lunch (18th/19th) and the conference dinner (18th) at the Edgbaston Cricket Ground.

Workshop

The conference will be preceded by a half-day workshop on the use of finite element methods for modelling light transport in tissue.

The workshop's organiser is Dr Hamid Deghani, one of the co-developers of the NIRFAST package based in Dartmouth. The tutorial is *free* for paid-up conference delegates and will particularly benefit research students and early career researchers working in the field.

Invited speakers

Invited speakers include Professor Boudewijn Lelieveldt (Leiden), Professor Daniel Rueckert (Imperial College London) and Professor Milan Sonka (Iowa).

Paper submission

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. Communications outlining challenging image-analysis applications and/or unsolved problems from a clinical perspective are invited in the form of challenge abstracts (2 pages).

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 publication in the on-line journal Annals of the BMVA and prizes will be awarded for the best work.

Important dates

Submission deadline (new):	Monday 25 March 2013
Notification of acceptance:	Monday 13 May 2013
Camera-ready copy deadline:	Monday 27 May 2013
Early registration:	Thursday 13 June 2013
MIUA 2013:	17–19 July 2013

Further details of the conference, paper submission, scope and venue can be found at:

http://www.miua.org.uk

Ela Claridge, Chair
MIUA2013 Organising Committee
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BMVC 2013 – Call for Papers

The 24th British Machine Vision Conference (BMVC) will be held at the University of Bristol on 9–13 September 2013. The host City of Bristol is located in the South West of the UK, two hours from London. BMVC is one of the major international conferences on computer vision and related areas. It is organised by the BMVA.

Authors are invited to submit full-length high-quality papers in computer vision, image processing and machine vision. Submitted papers will be refereed on their originality, presentation, empirical results, and quality of evaluation. Submission is now open.

All papers will be reviewed doubly blind, normally by three members of our international programme committee.

BMVC is a single-track meeting with oral and poster presentations and will include two keynote presentations plus two (traditional) tutorials.

Confirmed keynote speakers are Professor Andrew Zisserman (University of Oxford) and Professor Frank Dellaert (Georgia Tech).

Topics include, but are not limited to:

- Activity and behaviour recognition
- Document processing and recognition
- Image processing techniques and methods
- Model-based vision
- Motion, flow and tracking
- Object and object class recognition
- Person, face and gesture tracking
- Real-time and robot vision
- Segmentation and feature extraction
- Statistics and machine learning for vision
- Stereo, calibration, geometric modelling and processing
- Texture, shape and colour
- Video analysis
- Vision for quality assurance, medical diagnosis, etc.
- Vision for visualization, interaction, and graphics.

Important dates

Full Paper Submission Due:	24 Apr 2013
Author Notification of Acceptance:	1 Jul 2013
Camera-ready Paper & Author Registration due:	25 Jul 2013
Conference Start:	9 Sep 2013

Conference Chairs

Tilo Burghardt, Walterio Mayol-Cuevas and Majid Mirmehdi (Bristol University).

Information

For more information please visit:
http://bmvc2013.bristol.ac.uk

For enquiries please contact:
bmvc2013@cs.bris.ac.uk

IS&T/ SPIE Electronic Imaging 2013, Burlingame CA USA

The Electronic Imaging conference is an annual event jointly organised by the Society for Imaging Science and Technology (IS&T) and the International Society for Optical Engineering (SPIE). Every year, this event brings together researchers with diverse backgrounds from both the academia and industry. The conference is traditionally held at the impressive Hyatt Regency San Francisco Airport Hotel in the small Californian town of Burlingame to the south of San Francisco.

A view of the ocean and San Francisco airport

The appeal of IS&T/SPIE Electronic Imaging to many is its incredible breadth of covered topics. Indeed, with

electronic imaging being the only common denominator, the program incorporates talks on anything and everything ranging from hardware acquisition and display systems to algorithms in specific fields such as surveillance and transport, document retrieval and optical character recognition, and 3D computer vision. In addition, research on the physiological impact of abundant imaging technology on humans as well as the psychological studies of human visual perception every year receive a fair representation at S&T/SPIE Electronic Imaging. All in all, the conference can be highly recommended to anyone seeking to gather a global multi-disciplinary overview of research in imaging technology in addition to capturing the highlights of one's own primary research interest.

As is customary, this year's IS&T/SPIE Electronic Imaging event consisted of a series of parallel presentation tracks to accommodate all sorts of research interests. Amongst the all-conference events, the two plenary presentations stood out in particular.

Grand Peninsula Ballroom: main hall of the conference venue, Hyatt Regency San Francisco Airport Hotel, Burlingame, CA, USA. The place for coffee breaks and demo sessions.

The first keynote titled "Another Look at Signals and Images" was given by Professor Sabine Susstrunk from the École Polytechnique Fédérale de Lausanne (Switzerland). In the talk, the speaker swiftly grabbed the attention of the audience by promising to show how one can take 'better' photos. She subsequently went on to model standard image acquisition as a lossy compression system and argued that the desired quality of imaging was often impossible without an auxiliary information channel to compensate for the loss through compression. Professor Susstrunk showed how near-infrared sensing provided such an auxiliary channel for the applications of landscape image de-hazing and human portrait enhancement. In both cases, use is made of the fact that near-infrared light has different properties from the visible spectrum light: for example, near-infrared is not scattered as much by precipitation particles in hazy conditions. Exploiting the differences in properties allows for a more complete capture of reality with every sensor channel contributing within its own range of capabilities. The speaker's argument was clear and simple: no image quality restoration applied as post-processing in a lossy data acquisition system can ever outperform a system with lower lossiness of the imaging process. Professor Susstrunk was the recipient of the IS&T/SPIE Scientist of the Year Award this year.

The second keynote talk was truly inspirational and surely made many a heart, including my own, beat faster. The presentation titled "A Trillion Photos" was given by Professor Steve Seitz affiliated both with the University of Washington (USA) and Google Research. The focus of his presentation was 3D reconstruction of historical landmarks in Rome and Venice from tourist photos automatically harvested from photo-sharing websites such as Flickr. The objective of his group's research did not lack in ambition being nothing more or less than reconstructing Rome in a day! The abundance of tourists coming to Rome every year and the current obsession of people with posting their entire life on social media sites had generated an impressive visual documentation of popular tourist destinations such as Rome. In fact, major landmarks had been shot from every possible camera angle. Exploiting the Structure-from-Motion technique to determine the camera position of each shot, Seitz and his colleagues registered the views together to create full 3D reconstructions. In contrast to other work, these reconstructions were not just of individual landmarks but rather of whole districts surrounding them (everything sufficiently represented through tourist photography). The breath-taking demos of the work included virtual tours around St. Peter's Square in the Vatican City as well as birds-eye view images of bridges over Venetian canals. Sure the presented reconstructions were not perfect with some holes glaring here and there. I believe however that these flaws hardly lessened the awe of the audience for this work, given the extreme time and prior information constraints the researchers had imposed on themselves: the reconstructions after all were done in one day using unsupervised image acquisition techniques! Related research of Steve Seitz and his group members includes 3D face reconstruction of famous people from publically available unstructured photo collections and capturing an individual's life in a 30-second long video by automatically selecting and compositing photos taken at different ages. The latter application is in high demand by Internet photo sharing websites such as Picasa for encapsulation of a person's growing-up process. Currently, Steve Seitz is working on an application for Google Maps allowing one to get a visual of a landmark from any direction by warping from one posted tourist photo to the next at a click of a mouse.

IS&T/SPIE Electronic Imaging 2013 hosted a demonstration session seen by many companies as an excellent opportunity to elevator-pitch their products to potential clients. Despite the on-going exchange of business cards, the session offered a lot to an academic as well. Personally, I was very glad to see how abstract concepts of a few years ago had now materialised into tangible products ready for the market. 3D Freeview without polarisation goggles, based exclusively on eye tracking, is but one example.

A picturesque promenade by the ocean

Despite the slightly disappointing high rate of last minute presentation cancellations and author no-shows, the individual-subject-related content of the conference was a satisfactory experience too, at least as far as I can tell from the two tracks I mostly followed, i.e., 3D Image Processing and Applications and Stereoscopic Displays and Applications. The former track covered research dealing with unsolved issues of various 3D reconstruction techniques. For instance, in Time-of-Flight based reconstruction papers the common concern seemed to be with the improvement of acquired depth map accuracy. 3D registration research as well as research on spatially-varying reflectance (BRDF) sampling also made an appearance. The track was concluded with presentations featuring specific applications of 3D reconstruction algorithms, some of which were quite original: e.g., estimation of geometric characteristics of spreading fires for efficient fire-fighting or karate move recognition from skeletal motion in order to assist novices in mastering these moves. One memorable presentation from the Stereoscopic Displays and Applications track was on methodology for stereoscopic picture quality assessment. The work was well-motivated revealing the extreme mismatches in rendered left and right views in "Avatar" and other high-budget 3D productions. The mismatches include vertical and horizontal offsets, colour mismatches and differences in rendering clarity of images. Such mismatch flickering with high frequency in rendered images had been found to cause headaches and other discomfort issues in susceptible viewers. The work presented a methodology for automated detection of such health-threatening artefacts allowing for their easy elimination. Health hazards associated with 3D content proliferation were discussed at length in a separate session of the track.

IS&T/SPIE Electronic Imaging 2013 was my first experience of an international conference where I got to participate both as a speaker (in the Video Surveillance and Transportation Imaging Applications track) and as a member of the audience. As a young researcher, I benefited from the event in both capacities. As a speaker, I received valuable feedback on my work from experienced researchers and tried my hand at defending my approach and research results. As a member of the audience, I gained a global perspective on the current state-of-the-art in the field of electronic imaging as well as a few insights into the field of 3D computer vision in which I am currently doing my doctoral research. I recommend IS&T/SPIE conferences to anyone entering the world of academic research as an excellent and friendly venue to present one's work. As an extra incentive, next year's IS&T/ SPIE Electronic Imaging conference will be held in San Francisco!

More of sunny California, close to the conference venue

In conclusion, I would like to thank the British Machine Vision Association for sponsoring my trip to the IS&T/SPIE Electronic Imaging 2013 Conference. If you have any questions about the conference, please don't hesitate to contact me.

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Report on ISBI 2012: *From Nano to Macro*

The 9th International Symposium of Biomedical Imaging: *From Nano to Macro* (ISBI 2012) was held in Barcelona, Spain on 2–5 May 2012. The city of Barcelona, with a population of about 1.6 million, is the second largest city in Spain and is located in the north east of the country. In addition, it is the capital of the autonomous community of Catalonia, where people speak a distinct language, which demonstrates influences from Spanish, French and Italian, known as Catalan. Barcelona is also a popular tourist destination, an economic, cultural and sports centre. The Mediterranean aura of the city, which combines the sea, sun and warm weather is certainly appealing to every visitor.

CCIB by night

The conference venue was located at the Centre Convencions Internacional Barcelona (CCIB), a modern conference centre located next to the Mediterranean coast, which opened its doors to the public in November 2004. Since then, the CCIB has hosted numerous national and international events. The centre consists of two different buildings, which are linked by a subterranean avenue, the Convention Centre and the Forum Auditorium. ISBI 2012 was hosted in the Convention Centre, which was designed by José Luis Mateo, a well known Spanish architect. The building consists of 38 different rooms that are distributed over three different levels. The technical program of the conference was held on the first level of the building, whereas during the opening day evening, the Welcome Reception was held on the second level, in the Banquet Hall, a spacious room with a direct view of the sea.

ISBI is jointly sponsored by the IEEE Engineering in Medicine and Biology Society and the IEEE Signal Processing Society. ISBI is one of the major international conferences, where both theoretical and applied advances are presented in the field of biomedical imaging and image computing. This year, 430 papers were accepted out of 701 submissions, with 135 papers as oral presentations and 295 as posters. The conference is a multiple-track event, covering a wide range of research topics, such as vascular, brain, cardiac and cancer imaging and analysis, computer aided diagnosis, ultrasound imaging and analysis, MR imaging, biological image analysis, tomographic reconstruction, optical imaging, microscopy imaging, image-guided interventions, image reconstruction, diffusion and functional MRI, shape modelling, image restoration, segmentation and registration.

Prior to the conference, two workshops and six tutorials were held. The first workshop was the Bioimage Analysis Workshop, and the second workshop was the Medical Image Analysis Workshop. These two events brought together people from the biological and the medical imaging communities to discuss and share ideas, problems and visions regarding the development of open source software tools. The two workshops were funded by the EuroBioImaging consortium. EuroBioImaging is a large-scale project that aims to contribute towards the harmonisation of the biological and biomedical imaging infrastructure in Europe. The two workshops were held in the two days that preceded the opening of the conference.

Opening ceremony with Alessandro Frangi and Andres Santos

The six tutorials were: “Learning and Modeling in Functional Brain Image Analysis”, “Application of Image Processing for Identifying Objects and Dynamics in Biological Images”, “Variational Methods in Biomedical Imaging”, “Use of ITKv4 (and VTK) in Biological Imaging”, “Manifold Learning in Medical Image Analysis: Applications to Video Endoscopy and 4D Imaging”, and “Transforms and Operators for Directional Analysis and Processing of Biomedical Images”. Three of the tutorials were held the day before the official opening of the conference, and the

remaining three tutorials were held on the morning of the first day of the event.

Apart from the first day of the conference, which always exhibits a different schedule, the remaining 3 days demonstrated the same pattern in the sequence of its events. The early morning hours (8:30–9:15) were reserved for the Special Focus Lectures, and were followed by two sessions of oral technical presentations until the lunch break (13:00–14:30). The plenary talks were scheduled after the lunch break and were followed by a session of poster technical presentations and a session of oral technical presentations. The plenary talks were given by Dr. Eric Betzig, Dr. Juergen Popp, Professor Emmanuel Candes and Dr. Lihong v. Wang on "Pushing the Envelope in Biomedical Imaging", "The Broad Range of Raman-based Spectral Imaging for Biomedical Analytics", "Compressive Sensing for Faster Imaging" and "Photoacoustic Tomography: Ultrasonically Breaking the Optical Diffusion Limit" respectively.

Student Networking Lunch

The Special Focus Lectures provided a new element for this year's conference. These lectures were given by established researchers, who presented the state-of-the-art as well as challenges in important areas of research covered by the members of this community. Another new element for this year's conference was provided by the Challenges. Challenges are very useful in benchmarking the performance of several techniques in the context of a domain-specific image analysis problem, on a common dataset, employing the same evaluation methodology. This year, six different challenges took place: "Particle Tracking", "Segmentation of Neuronal Structures in EM stacks", "Vessel Segmentation in the Lung 2012", "Cardiac Delayed-Enhancement Magnetic Resonance Image Segmentation", "High Angular Resolution Diffusion Imaging", and "Challenge US: Biometric Measurements from Fetal Ultrasound Images".

Performance of Castellers de Sants during the Banquet

Meet the Editors'

Prof. Milan Sonka talking to students during the 'Meet the Editors' event

In recent years, several networking events and social activities for the students take place in every ISBI conference. This year, the first such event was a "Meet the Editors" lunch, in which students had the opportunity to meet and discuss with editors of journals in the field of biomedical engineering about the qualities and features that a paper needs to demonstrate, in order to receive positive reviews. The second event was a "Lunch with Leaders", in which students had the opportunity to talk to established people in the field of biomedical imaging who were willing to share their experience and give hints and tips with respect to successful career planning. The third event was a "Networking Lunch", in which students had the chance to meet other students from different universities and countries. Such an interaction is always interesting, as people who study in different educational systems have different experiences and stories to share from their doctoral training. In addition, such an event assists students to create a network at an early stage in their careers. The last event was the "Best Student Paper Awards", a competition in which the best three student contributions received an award.

Poster technical presentations

Regarding my presence in this year's conference, during the last day's session of poster technical presentations, I presented my work, which was entitled "Automatic Differential Segmentation of the Prostate in 3D MRI using Random Forest Classification and Graph-Cuts Optimization". In this paper we address the problem of automated differential segmentation of the prostate in three dimensional magnetic resonance images of patients with benign prostatic hyperplasia. We suggest a framework that consists of two stages: in the first stage, a Random Forest classifier localises the anatomy of interest. In the second stage, Graph-Cuts (GC) optimization is utilised for obtaining the final delineation. GC optimisation regularises the hypotheses produced by the classification scheme by imposing contextual constraints via a Markov Random Field model. Our method obtains comparable or better results in a fully automated fashion compared with a previous semi-automatic technique. It also performs well, when small training sets are used. This is particularly useful in on-line interactive segmentation systems, where prior knowledge is limited, or in automated approaches that generate ground truth used for model-building.

Dr. Lihong V. Wang giving his plenary talk

As a concluding remark, ISBI 2012 was a very well organised event and worth attending. The level of quality of the presented work was also high. The next ISBI will take place on 7–11 April 2013 in San Francisco, California, USA. Finally I would like to thank the BMVA for supporting my trip and providing me the opportunity to attend this event.

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How to Get the IAPR Newsletter

As the BMVA is affiliated to the IAPR, all members of the BMVA are entitled to receive each issue of the IAPR newsletter. To get your copy of the January/February 2013 issue, select either of the following:

http://www.iapr.org/members/newsletter/Newsletter13–01/ [HTML]

http://www.iapr.org/docs/newsletter-2013-01.pdf [PDF]

Professor E.R. Hancock
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Academy Honours Imagineer Team![3]

The Academy of Motion Picture Arts and Sciences has recently awarded 25 'Technical Oscars' to people who have demonstrated "a proven record of contributing significant value to the process of making motion pictures". Amongst these is Philip McLauchlan who was some time ago a member of the Executive Committee of the BMVA and is well known to many of us. The award he and his team received was:

Scientific and Engineering Award (Academy Plaque)

To Dr. Philip McLauchlan, Allan Jaenicke, John-Paul Smith and Ross Shain for the creation of the Mocha planar tracking and rotoscoping software at Imagineer Systems Ltd.

Mocha provides robust planar-tracking even when there are no clearly defined points in the image. Its effectiveness, ease of use, and ability to exchange rotoscoping data with other image processing tools have resulted in widespread adoption of the software in the visual effects industry.

Further details of this year's awards and award ceremony can be found on the Academy's website:

http://www.oscars.org/press/pressreleases/2013/20130103.html

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[3]Thanks are due to the Academy of Motion Picture Arts and Sciences for permission to reproduce some of this material.

Quantitative Image Analysis for Astronomical Applications

This one-day BMVA technical meeting will take place in London, UK on 9 October.

Chair: Neil Thacker

We invite potential speakers and attendees to discuss the application of image analysis techniques to astronomical data. The event will bring together imaging science experts and planetary science researchers to explore the importance of quantitative data analysis methods in the interpretation of planetary surface images. There will be an emphasis on identifying quantitative planetary science applications and data analysis techniques which can provide scientifically meaningful outputs, e.g., applications where well-defined measurements must be taken in the presence of noisy data, requiring methods capable of giving quantitative error assessments.

Participants from planetary science backgrounds are encouraged to bring specific questions which can potentially be answered through the study of surface images. Participants from imaging science backgrounds are encouraged to bring quantitative statistical techniques and algorithms which could find utility in answering such questions. This meeting may be of interest to a wide audience, including those involved in the analysis of any type of astronomical image data, e.g. space telescope imagery, crowd sourced (Zooniverse) projects etc.

Call for Participation

All those interested in presenting material at this meeting are invited to submit a paragraph describing their topic to neil.thacker@manchester.ac.uk for consideration by 17 July.

Interested in running your own technical meeting? For more details contact the meeting organiser, Andrew Gilbert.

Andrew Gilbert
University of Surrey
email: a.gilbert@surrey.ac.uk

Editorial

(*continued from p.2*)

problem is whether we are talking about vision or about speech, earth tremors or smells: in other words, are the signals 1D or 2D? Bearing in mind that many vision problems are anyway analysed by first converting 2D problems to 1D, this is hardly a cause of difficulty; and of course many pattern recognition problems are multi-dimensional in nature, or even obtain improved solutions by converting low-D problems to high-D.

There are now many other relevant titles, a good number of which reflect further specialisms in areas such as robotics, medical imaging, remote sensing and astrophysics, and rather than make this editorial too laborious by listing all of them, I shall just mention three examples: *IEEE Trans. Medical Imaging* (1982), *IEEE Trans. Robotics* (1985-1989-2004-), and the *Journal of Photogrammetry and Remote Sensing* (JPRS, 1989-); the latter is interesting as it started life in 1938 – before the war years – with the title *Photogrammetria*, easily predating both computers and satellite imagery, and thus being relevant mainly for the mathematical foundations that it laid.

Actually, my main aim in all this analysis is to note that journal titles form an interesting archaeological terrain from which to discern the changing state of our subject. To some extent it is curious that it has not divided itself into theory and experimental sectors; nor has it separated itself into core development and application-orientated sectors: rather, these have gone along in parallel with each other, so (with few exceptions) the same journals can be used for each – and it is the journal editors who have the real problems, as their work has become increasingly variegated and the difficulty of finding good reviewers has increased substantially. Indeed, I find it by no means uncommon in my current editorial work to have to ask 10–15 people to review a paper before I have three useful reviews that I can fairly go back to the authors with. That is one unfortunate sign of the times.

I will conclude by listing (see box) many of the journals that have been relevant to vision, with their dates of introduction (continuations with revised titles are indicated by additional dates). The approximate numbers of journals introduced in the decades from the 1930s onwards are 1, 0, 1, 3, 6, 7, 8, 5: note that the last of these should really be updated to include the many open-access journals that have recently arrived on the scene.

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Elsevier JPRS	1938-1989-
IEEE Trans. EC	1953-1967
IET EL	1965-
Elsevier PR	1968-
IEEE Trans. Computers	1968-
Elsevier AI	1970-
IEEE Trans. SMC	1971-
Elsevier CGIP	1972-1982
IET CDT	1978-1980-1993-2006-
Elsevier SP	1979-
IEEE Trans. PAMI	1979-
Elsevier PRL	1982-
IEEE Trans. Medical Im.	1982-
Elsevier CVGIP	1983-1990
Elsevier IVC	1983-
IEEE Trans. Robotics	1985-1989-2004-
Springer IJCV	1987-
Springer MVA	1988-
Elsevier CVGIP: GMIP	1991-1994
Elsevier CVGIP: IU	1991-1994
IEEE Trans. IP	1992-
IEE VISP	1994-2006
Elsevier CVIU	1995-
Elsevier GMIP	1995-1999
Elsevier RTI	1995-2005
RPS ISJ	1997-
Elsevier GM	2000-
IET CV	2007-
IET IP	2007-
Springer RTIP	2007-
Springer SIVP	2007-

Clustering Big Data

On 29 November 2012, Anil Jain gave an invited talk at the University of Notre Dame, entitled "Clustering Big Data". Anil is a world-renowned expert in the area of clustering and it is fortunate that a video recording of his talk was made. He has made it available for all IAPR members (including BMVA members) and the download can be obtained from the following URL:

http://www.youtube.com/watch?v=nL55ixBbcMU&feature=youtu.be

I am sure members will be most happy about this kind gesture.

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