

Computing News round-up – November/December 2015

Awards and Esteem

Aldo Faisal's work on gaze-controlled machines was named as the first of 10 World Changing Ideas by Scientific American (this is for their 170 year anniversary edition).

Daniel Rueckert has been elected as IEEE Fellow for contributions to biomedical image computing. Each year the IEEE Fellow Committee, following a rigorous evaluation procedure, recommends a select group of recipients for elevation to IEEE Fellow. Less than 0.1% of voting members are selected annually for this member grade elevation.

Sebastian Uchitel was the recipient of the Houssay Prize 2015 presented by the President of Argentina, at the Argentine Ministry of Science, Technology and Innovation. The prize is the most important distinction in Argentina for researchers under the age of 45 and recognises individuals with outstanding contributions to science that have contributed to the development of science and technology in Argentina. Sebastian Uchitel was awarded the prestigious prize in the Category "Physics, Maths and Computer Science".

Top journals, conference papers and publications

Ben Glocker is guest editor together with Nikos Paragios (Ecole Centrale Paris) and Ramin Zabih (Cornell NYC Tech / Weill Cornell Radiology) of a special issue on "Discrete Graphical Models in Biomedical Image Analysis", which will be published in Vol. 27 of Medical Image Analysis in January 2016.

Orestis Tsinallis, P M Matthews, and **Yike Guo** 'Automatic Sleep Stage Scoring Using Time-Frequency Analysis and Stacked Sparse Autoencoders', *Annals of Biomedical Engineering*, 2015. DOI: 10.1007/s10439-015-1444-y.

Peter Pietzuch had an article accepted in the IEEE Transactions on Mobile Computing (TMC), the top-ranked journal on mobile computing research, on "C-RAM: Breaking Mobile Device Memory Barriers Using the Cloud".

The Large-Scale Distributed Systems (LSDS) group led by **Peter Pietzuch** has a total of 3 accepted papers at the ACM International Conference on Management of Data (SIGMOD'16), which is the highest ranked conference on data management and big data research. The papers are on hybrid CPU/GPU stream processing, scalable geospatial querying on multicore CPUs, and semantics load shedding in federated stream processing systems.

Paolo Turrini, Computing rational decisions in extensive games with limited foresight. Proceedings of the 30th AAAI conference on Artificial Intelligence, February 12-16 2015, Phoenix, USA.

Valentin Goranko and **Paolo Turrini**, Pre-play negotiation games with conditional offers, International Game Theory Review (2016)

Paul Harrenstein, **Paolo Turrini** and Michael Wooldridge, Preparation Sets in Boolean Games. Studia Logica (2016)

Funding success

Aldo Faisal was awarded as Co-I a NIHR/BRC funded grant in "Experimental Medicine Call" titled "Probing functional network dynamics in early stage Parkinson's disease". The grant involves neuroimaging, behavioural experiments and computational neuroscience to understand the mechanisms of cognitive impairment in Parkinson's.

Julie McCann and colleagues have been awarded a 5 year EPSRC programme grant to examine 'A Science of Sensor Systems' with Prof. Muffy Calder, Glasgow (also former Scottish Scientific Adviser), and Liverpool and St Andrews Universities.

Julie McCann's Intel Collaborative Research Institute on Cities (ICRI) has been awarded its further two year's funding from Intel to extend their work on sensing systems and communications for Cities.

Julie McCann has also been awarded a 3 year EPSRC grant to use sensing technologies to help map the 'Water, Energy, Food Nexus' with Oxford, Glasgow and UCL.

A consortium comprising Cambridge, Imperial, Oxford and Berkeley (USA) has gained significant funding to found The Leverhulme Centre for the Future of Intelligence. The lead for Imperial is Computing's **Murray Shanahan**. The funding is £10 million spread over 10 years.

<https://www.leverhulme.ac.uk/news/LeverhulmeTrustinvests£40million>

Media mentions

Will Knottenbelt was featured on the BBC programme 'Click' on the 5 December, where he used the DSI's Data Observatory to demonstrate how financial transactions using the Cryptocurrency Bitcoin could be viewed (<http://www.bbc.co.uk/iplayer/episode/b06rjk3q/click-05122015>).

Will was also interviewed live on BBC World Service News this week discussing Cryptocurrencies and Bitcoin in the context of privacy, anonymity and its future impact.

Events, seminars and key note talks

Dalal Alrajeh has been invited to give a talk at the Dagstuhl Seminar: Machine Learning for Dynamic Software Analysis: Potentials and Limits in April 2016.

Marc Deisenroth gave a tutorial at the Gaussian Process Summer School Processes held at the University of Sheffield. He was also an invited speaker at the Undergraduate Queen Mary AI Society.

Aldo Faisal was an invited speaker at the following events:

- International Symposium on Natural User Interfaces and Intention based Enhancement of Reaching and Grasping in Physically Disabled People in Lisbon.
- a special working group on "Natural Behaviour in Health and Disease" meeting held at the Rehabilitation Institute of Chicago.
- "Takin' Charge" Symposium on Robotic Restoration of Movement for Stroke and Duchenne Muscular Dystrophy workshop at the Institute of Child Health (London).
- Robotic Restoration of Movement at the "Action Duchenne International Conference 2015"

Antonio Filieri was invited to talk at the 44th CREST Open Workshop - Predictive Modelling for Software Engineering, 23-24 Nov, UCL on "Lightweight Adaptive Filters for Tracking Software Behaviour @Runtime".

Ben Glocker was invited to participate in a panel discussion on 'Big data in medical imaging: passing fad or paradigm shift' at the Alan Turing Institute scoping workshop on Medical Imaging: 7-8 December, British Library, London.

Julie McCann welcomed David Gordon, Intel's Strategic Planner for Architecture and Systems to the Adaptive Embedded Systems Engineering group which follows a visit from Sir Mark Walport Government Scientific Adviser a few weeks earlier.

As co-chair of IEEE SENCON international conference on sensing and communications, Prof **Julie McCann** and Prof Prasun Sinha from Ohio State University, are extending the tradition of publishing high-quality papers by asking successful authors to record a 5 minute movie of their work which will be uploaded with the conference presentation and a moderated blog of audience feedback on the work. IEEE have welcomed these innovations – watch this space.

Luigi Nardi is organising Architectures and Systems for Real-time Mobile Vision applications ([ASR-MOV](#)) on 12-18 March 2016, in conjunction with CGO'16 in Barcelona, one of the top conferences in code generation and software performance optimisation.

Maja Pantic will be speaking at the World Economic Forum in Davos, Switzerland, in January 2016 Ideas-Lab sessions organised by Nature.

Major committee/advisory board memberships

Dalal Alrajeh has been invited to serve on the program committee of ICSE 2017, the flagship conference in software engineering. Dalal has also been invited to serve on the program committee of International Conference on the Principles of Knowledge Representation and Reasoning KR 2016.

Marc Deisenroth and **Aldo Faisal** were Area Chairs for NIPS 2015 held in Montreal.

Aldo Faisal was the Conference Chair for Neurotechnix 2015 in Lisbon.

Antonio Filieri is on the programme committees for ICSE 2016, the 11th International Symposium on Software Engineering for Adaptive and Self-Managing Systems (SEAMS 2016), and 4th Workshop on Formal Methods for Software Engineering (FormalISE 2016).

Kin Leung has just completed his responsibility as the Chair of the IEEE Fellow Evaluation Committee for Communications Society from 2012 to 2015.

Kin Leung and **Julie McCann** respectively are serving as the General co-Chair and co-Chair of the Technical Program Committee for the IEEE SECON 2016 conference, which will be held in London in June 2016.

Alessio Lomuscio is serving as Area Chair for the 15th International Conference on Principles of Knowledge Representation and Reasoning (KR2016) to be held in Cape Town in April 2016.

Luigi Nardi is serving as a PC member to the HiPEAC conference in Programmability and Architectures for Heterogeneous Multicores ([MULTIPROG-2016](#)) in Prague.

Paolo Turrini is acting as PC member for KR 2016, and also for the International Joint Conference on Artificial Intelligence in New York (IJCAI 2016) and Autonomous Agents and Multiagent Systems Conference (AAMAS 2016) in Singapore.

Industrial Liaison

In a talk organised by the Computing Department, Mike Schroepfer, Chief Technology Officer of **Facebook**, shared his insights with Imperial at a talk showing some of the Company's plans for the next decade. Schroepfer introduced a range of science fiction-esque developments that Facebook is working on for the future – from high-altitude drones that act as roaming internet signals to computers that think like humans and virtual reality technology that brings people together. The talk, given to a 700 strong audience of Imperial staff and students, outlined Facebook's '10 year vision' of where the company is going and the innovations it's looking to develop.

The following companies have recently renewed their **CPP membership**:

Bloomberg	Formicary	Netcraft
Credit Suisse	King	Ocado
Facebook	Improbable	

RA news and events

We would like to welcome our three new RA Reps, **Luigi Nardi**, **Nicholas Ng** and **Sijin He**, who will be contact points for the RA's in the coming year, along with arranging social events, workshops, CV clinics, and providing general advice/information.

The following events have been arranged and are open to all RA's:

RA Lunch: the Reps have started up the fortnightly RA lunches again, with some menu changes, and the next date for the New Year will be **Tuesday 12th January** at 1pm in Huxley 218.

Faculty RA Coffee Morning: the DoC Reps will be hosting one of the regular Faculty RA coffee mornings on **Friday 22nd January**, 10:00-11:30 in 217/218. This is an initiative run by the Postdoc Development Centre and is an opportunity for RA's to meet fellow researchers from across Engineering. Tea, coffee and cakes will be provided.

CV Clinic: Karen Hinxman from the Postdoc Development Centre will be holding CV clinics for RA's in 2016, focusing on CV's for both academic and industry career paths. The first clinic will be held on **Tuesday 26th January**, 14:30-16:30, in Huxley 342 and the second will be held in April, date to be confirmed.

Student achievements

Department of Computing student team DoCThors, made up of **Yordan Chaparov**, **Mihai Popa** and **Daniel Posdarascu**, has won a gold medal at this year's Northwestern European Programming Contest (NWERC [1]) held in Linköping, Sweden. In this highly competitive event teams made up of three students were given the challenge of solving 11 algorithmic problems [2] within 5 hours sharing a single computer without Internet access.

As the best-ranked UK team the DoCThors solved 9 problems and secured second place out of all the 95 participating teams. With this excellent result the team qualified to represent the Northwestern European region in the ACM-ICPC World Finals [3]. The finals will be held in May 2016 in Phuket, Thailand. **Christian Ledig**, a Research Assistant in DoC, who has been heading the Imperial ICPC program since 2011, accompanied the DoCThors and a second Imperial team Y U NO ACK as coach. The ICPC program is mainly funded through the Corporate Partnership Program. Overall seven teams from UK universities were ranked among the top 20 underlining the potential of the sub region of the UK and the Republic of Ireland (UKIEPC [4]).

Alumni success

Dr Marily Nika was presented with the WISE Influence Award, sponsored by the Royal Academy of Engineering, on Thursday 12 November at the WISE Awards reception held at the Grange Hotel, London. She was supported at the reception by her former PhD supervisor Will Knottenbelt and DoC Head of Department Susan Eisenbach.

Many of the activities Marily has been recognised for took place during her time as a PhD student in the Department of Computing. She founded the Imperial Women in Computing group and organised the UK's first female only hackathon, inspiring UCL, Oxford and Edinburgh Universities to launch their own Women in Computing societies. Marily now works for Google England as a Programme Manager, and is also a director of the London Geekettes, part of a global community dedicated to inspiring and supporting women in technology. Marily says 'women should follow their passions and realise that if I was able to make my dreams come true, so can they.'