SCHOOL OF INFORMATICS

Highlights

2014/15

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- The Institute for Data Science and Engineering was established in conjunction with the Schools of Engineering, Mathematics and Physics, plus the Edinburgh Parallel Computing Centre (EPCC), to coordinate the University of Edinburgh interface with The Alan Turing Institute. The School's Steve Renals was appointed as its first director.

- The School secured an EPSRC programme grant (VADA: Value Added Data Systems), led by Leonid Libkin with a total value of £5.7m over five years, £1.55m of which accrues to the School of Informatics.

- We recruited to a new established chair in Cyber Security and Privacy.

- We held the Informatics Jamboree in April with an equality and diversity theme.

- We exceeded our target for take up of professional and development reviews, achieving over 90% completion.

- Chris Williams was appointed as Edinburgh's University Liaison Director by The Alan Turing Institute on a two-year secondment.

- The School hosted the 10th anniversary Hoppers event of the Society for Women in Computing, in December 2015, attended by staff and students.

- The School's MOOC, Code Yourself!, attracted just under 60,000 enrolments in its first iteration. It has since been moved to a rolling monthly instance and has attracted a further 25,000 enrolments between August and December 2015.
- EIE-15 was the largest investor conference ever held in Scotland (1000 attendees and >200 investors) and now one of the largest in Europe. The first EIE-London was held in Nov-15 in partnership with UCL and EIT Digital as an investment platform for high growth technology companies as part of IV3.

Institute for Adaptive and Neural Computation

- Paolo Puggini was awarded the Alison Douglas PhD Dissertation Prize for the Best PhD Thesis in 2014/2015. Paolo completed his PhD in the group of Ian Duguid and Mark van Rossum (Informatics) on "Input-Output transformations in the awake mouse brain using whole-cell recordings and probabilistic analysis".
- Iain Murray was awarded the Van Heyningen Award for Teaching in Science and Engineering.
- PhD students Jean-Luc Stevens and Philipp Rudiger won a UK Open Source Award (http://www.opensourceawards.org/index.php/shortlist) in the Student category. They were awarded first prize of £1000 for HoloViews (http://ioam.github.io/holoviews), a groundbreaking open-source data visualization package in Python for scientists and engineers.
- Miltos Allamanis (PhD student) won a Distinguished Paper Award for his paper "Learning Natural Coding Conventions" at the 2014 Foundations of Software Engineering conference. This was joint work with his supervisor Charles Sutton (ANC), Earl Barr (UCL), and Christian Bird (Microsoft).

Centre for Intelligent Systems and their Applications

- The AI Planning MOOC run by Austin Tate's group reached 100,000 students via the Coursera platform and open source versions created on YouTube and local Informatics servers.
- The DReaM Group had their Platform Grant renewed from 1st Nov 2015 for four years. There are now 11 grant holders over three sites: Edinburgh (Bundy, Fleuriot, Smaill, Aspinall), Heriot Watt and Goldsmiths London. The overall theme is the interaction of representation and reasoning, especially the ways in which the diagnosis of reasoning failures can lead to representational evolution.
- Completion of over three years work on EPSRC Autonomous and Intelligent Systems (AIS) programme focusing on work with Schlumberger on emergency response procedures and dynamic planning techniques to handle high tempo situations with Blow Out Preventers (BOPs) on sub-sea equipment on Oil Rigs. http://www.aiai.ed.ac.uk/project/hedlamp/
- Andriana Gkaniatsou's work on reverse engineering smart card implementations at the bit level has revealed staggering design faults in most of the most well-known cards - causing them to have serious security vulnerabilities. This work was presented at ACSAC 2015, a prestigious conference in computer security.

Institute for Computing Systems Architecture

- ICSA PIs Vijay Nagarajan, Mahesh Marina and Mike O'Boyle, with support from co-Is Boris Grot, Stratis Viglas, Hugh Leather and Nigel Topham, acquired new grants totalling around £1.5M from EPSRC and Leverhulme Trust. These were in a range of topics in Computer Architecture and Networking, with an emphasis on Energy Efficiency and High Performance.
- Boris Grot and Christophe Dubach won Google Faculty Research Awards.
- PhD student Volker Seeker, won the best paper award for "Measuring QoE of Interactive Workloads and Characterising Frequency Governors on Mobile Devices." at the IISWC.
- PhD student William Ogilvie won the ACM Student Research Competition at CGO.
- PhD student Saumay Dublish was awarded the Saranu International Research Scholarship.

Institute for Language, Cognition and Computation

- ILCC continues its strong record of success in the area of statistical machine translation, built on its internationally-renowned MOSES platform. 2015 saw Barry Haddow and Philipp Koehn 5 new EU grants in this area (QT21, TRaMooc, Himl, MMT and Cracker), with a value to School of £1.8M.
- Jean Carletta received the 2015 International Conference on Multimodal Interaction Ten-Year Technical Impact Award as the first author of a seminal data set [the AMI Meeting Corpus].
- Mirella Lapata, whose research focuses on probabilistic learning techniques for natural language understanding and generation, secured a prestigious European Research Council Consolidator grant, in December 2016.
- Dragan Gasevic was President of the Society of Learning Analytics Research (SoLAR), and is general chair for the 6th International Conference on Learning Analytics and Knowledge (LAK 2016), to be held in Edinburgh in the spring. He won two best paper awards with his students, at the 5th International Conference on Learning Analytics and Knowledge, and at the 37th Annual International Conference of the Higher Education Research and Development Society of Australasia.

- Kami Vaneia won a GCHQ grant for an Internet of Things Lab, with Chris Speed, Professor of Design Informatics in ECA. Together with an EPSRC grant awarded in December 2015 for Cyber Security of the Internet of Things, to Speed and Oberlander, this enables ILCC researchers to engage in a new strand of design and security work around the internet of things.

Institute of Perception, Action and Behaviour

- IPAB has had extensive success in the area of humanoid robots. Maurice Fallon led the MIT team at the DARPA Robotics challenge, and recently won the best paper award at Humanoids 2015. We have entered a research collaboration with NASA and their Valkyrie robot will arrive in Edinburgh in early 2016.
- Vito Ferrari has joined Google part-time to establish their first computer vision research group in Europe. This is likely to include re-implementation of some key algorithms developed in the School of Informatics, to learn visual models from large amounts of weakly labelled data.
- Bob Fisher is coordinator of the recently awarded 5.4 million Euro project 'TrimBot2020' involving eight European partners, including Bosch. This will combine robotics and 3D computer vision research and innovation activities to prototype the first outdoor garden trimming robot.
- The Edinburgh Centre for Robotics has signed major contracts: with Hitachi Central Research Labs (CRL-CER) in Tokyo, with support from UKTI and the Foreign and Commonwealth Office, in the domain of intelligent warehousing and autonomous manipulation robots; and with Kawasaki Heavy Industries Ltd for a five year development programme for multi-sensor algorithms for the monitoring and maintenance of underwater pipelines by autonomous underwater vehicles.

Laboratory for Foundations of Computer Science

- Leonid Libkin was elected to Academia Europaea.
- Grant from the Highlands and Islands Enterprise to Peter Buneman to bring superfast broadband to the NW Highlands and Islands.
- Wenfei Fan won the ACM PODS 2015 Test-of-Time Award (PODS is the premier international database theory conference).
- Grant Passmore's (former PhD student and researcher) start-up Aesthetic Integration won first place in the UBS Future of Finance Challenge.
- John Longley solved an important open problem of about 20 years' standing.
- Lots of papers in prominent places including two in Journal of the ACM (Kousha Etassami), two in Proc National Academy of Sciences (Vincent Danos) and a research monograph (John Longley).