

News from the Department of Computer Science

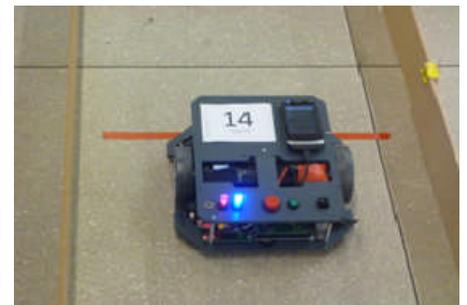
Dear Alumni,

A new term has just started at UCL-CS and it's a great time to reflect on some of our success stories since the last edition of CS News. And please also take note of the date for our next CS Alumni Dinner: *Wednesday 6th February 2013*. More details to follow soon.

Program a Robot

CS hosted its inaugural Robot Grand Prix in June jointly sponsored by Morgan Stanley and UCL Advances. It was the result of a ten-week module in which 1st year undergrads learnt to program a robot and move it successfully around a course, with trophies presented to the winning teams.

The robots were basic in structure, but using a low-level interface, students had to specify how much power the robots would use in wheel rotation, using C programming language to generate a set of instructions that were transmitted wirelessly from a laptop or netbook to the android phones on top of each robot. The students had not seen the track layout until the day of the race, at which point against the clock and in teams of two, they programmed their robots to understand the twists and turns of the course. The robots were designed and manufactured in-house and robust enough to survive bumps and scrapes.



After two days of racing and hours of hours of meticulously timed laps, the winners were announced. Congratulations to Michael Boon and Richard Davis who finished in first place; runners-up Teruki Tauchi and Vaibhav Bhatla and third placed Markus Padourek, Chi Chiu.

They were presented with trophies by Tim Bennett (Institute Securities Group Technology, Morgan Stanley) and Jake Dennison (Corporate and Banking Technology, Morgan Stanley).

Avatar beaming put to the test

Mel Slater, Professor of Virtual Environments, has given an exclusive demonstration of how the technology of 'beaming' robot avatars works, allowing a kind of 'physical' interaction at a distance. Prof Slater showed his pioneering technology to the BBC's Rory Cellan-Jones. He presented how he could 'beam' his wife, Dr Mavi Sanchez-Vives who was in Barcelona, into his office in London, in the guise of a robot.

Mel Slater calls beaming augmented reality, rather than virtual reality. In beaming - unlike the virtual worlds of computer games - the robot or avatar interacts with real people in a real place. Mel and his team have beamed people from Barcelona to London, embodying them either as a robot, or as an avatar in a specially equipped 'cave'.

One avatar was able to rehearse a play with a real actor, the stage being represented by the cave's walls screens projecting 3D images. [Click here](#) to see Mel Slater's video featured on BBC News.



Apps, Apps, Apps!



As various companies sell apps by the billions globally, software developers are approaching the field of apps as an increasingly foundational and key skill for software engineering. It demonstrates the ability to work with finely tuned software engineering problems, linking to existing data systems and produce unique technology that can be used on-the-go to collect, share and disseminate information. UCL-CS is already preparing its students for the demands of the market place.

We're proud to be the 1st UK university to include apps development in our core curriculum Computer Science courses. The software engineering lifecycle of apps development is now included in our teaching for Undergraduate and Postgraduate Computer Science, Financial Computing, Software Systems Engineering and Financial Systems Engineering Master's programmes. It will also be extended into many more teaching programmes. [Click here](#) for more details on how our Apps teaching has developed.

Prof Adi Shamir gives Distinguished Lecture

CS was thrilled to welcome Professor Adi Shamir, co-inventor of the RSA Cryptosystem and Turing Prize Winner, who gave a Distinguished Lecture: *How Cryptosystems are really broken*. Prof Shamir surveyed some of the latest attacks and showed how difficult it is to build truly secure communication systems

Following an engaging talk, Prof Shamir spent time talking with students, staff and CS alumni at our post-lecture reception. Prof Shamir has received numerous Awards for his work, including the Anna and Lajos Erdos Prize in Mathematics in 1983, the ACM Turing Prize in 2002 and the Israel Prize for Computer Sciences in 2008.

We were thrilled to host such a popular event and look forward to hosting more distinguished lectures next term.



Microsoft UK, JP Morgan & MSc SSE/FSE mid-project assessments

UCL's MSc Software Systems Engineering (SSE) students were kindly hosted by Microsoft UK in Reading to give mid-project feedback on students' dissertation projects. The projects were presented by each group followed by a Q&A session with Microsoft. Microsoft UK have officially supported the MSc SSE projects this year with technical assistance from a number of their developer and research groups, including MSR Cambridge and the Visual Studio Team. UCL are proud to announce a number of these projects use the latest Microsoft technologies, including Windows 8 apps development.

The same mid-project feedback was conducted for our MSc Financial Systems Engineering (FSE) students, kindly hosted by JP Morgan in Canary Wharf. It was attended by senior technical members from Citigroup, Credit Suisse, Markit and JP Morgan. Both Dr Dean Mohamedally and Donald Lawrence are very grateful for all of those companies support and commitment in partnership forming with UCL.



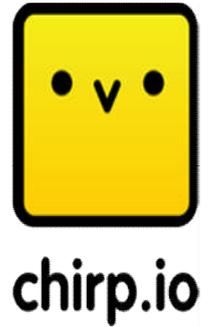
Both groups gained sound industry advice. This included milestone cycles for deliverables, reporting change management and handover expectations for their projects to their respective clients. This knowledge domain for software engineers is coupled to their specific industries and was invaluable coming from these top companies.



New app 'Chirp' enables data sharing with sound

UCL spinout Animal Systems has launched [Chirp](#), a new application for iOS that lets you share pictures with sound. Originating in UCL-CS initially funded by a UCL-Business Proof of Concept award, the founding team of Professor Anthony Steed and Patrick Bergel has developed technology that allows for transfer of information using short bursts of sound.

The new app for iPhone and iPad – called Chirp – produces audio designed to sound like digital birdsong, and transfers photos, notes and web-links to any Chirp-enabled device within listening distance. The distinctive sound has been engineered to work at low volumes even in noisy places and to be reliable over short ranges. It's hoped that the app will promote the underlying technology as a flexible new way to share information by proving that data can be sent from anything that makes a sound, including radios, public address systems and televisions, and collected by anything that can receive sound.



Professor Steed says "Because we use simple human-range audio to communicate short references, we can use all sort of devices as communication relays. We have already coded Chirps as ring-tones for dumb phones, and we have embedded Chirps in YouTube videos". The startup has ambitious plans for the future, including licensing the technology platform to other software and hardware developers so as to enable devices much simpler and cheaper than mobile phones.

Cisco Internships

Cisco International Internship Programme gives an opportunity to penultimate year undergraduate students to spend a year working for Cisco Systems at Cisco's Headquarters in San Jose, California. This year, five students from UCL are participating in the programme: including Seyed Milani from UCL-CS.



During their year with Cisco, the interns will work alongside Cisco's professionals on projects including developing next-generation collaboration tools, support for immersive video teleconferencing, tools to orchestrate the administration of datacenter cloud deployments, and firmware and middleware for Cisco Universal Computing System products.

Interns are also engaged in Cisco's teams work to deploy, operate and support Cisco's large scale (6000 servers) internal private computing cloud. We hope Cisco recruit more UCL- CS students next year. a blog written by those from UCL currently working in San Francisco can be read here <http://blogs.ucl.ac.uk/cisco-ucl>

Don't forget to keep up-to-date with the latest CS News

Why not keep up-to-date with Department's latest work – we're proud to have a big impact on the future of Computer Science. We continue to create innovative technologies that change lives with computers.

- Check us out on the web <http://www.cs.ucl.ac.uk/index.html>
- You can like us on Facebook [here](#) !!!
- Or follow us on Twitter [here](#) !!!

Kind regards,

John Shawe-Taylor
Head of Department
Professor of Computational Statistics and Machine Learning