
New Research Collaboration

Supporting flying robots and new memory architectures

Zurich, February 5, 2014. **ETH Zurich and EPFL are jointly entering into a new research partnership with Microsoft Research. Over five years, Microsoft Research will provide five million Swiss francs of funding to support IT research projects. Microsoft researchers will also work closely with the scientists at the two universities.**

Microsoft has been investing in Swiss research for years, and now the US technology company is renewing its longstanding collaboration with EPFL and ETH Zurich. Microsoft provides one million Swiss francs per year in funding for IT-related research projects at the two universities over a period of five years. The collaboration is a continuation of a project launched in 2008 that focused on embedded technology software solutions and prototypes. The new collaboration will now broaden the areas of computer science and deepen the collaboration between the three partners.

A pleasant surprise: high number of high quality projects

A steering committee jointly made up of representatives from EPFL, ETH Zurich and Microsoft selected the projects to support from applications submitted by computer scientists and researchers in IT related fields. The only requirement was the participation of a scientist from Microsoft Research in the project.

Scientists in Lausanne and Zurich submitted 27 proposals, seven of which were selected by the steering committee. Four of these projects originated at ETH Zurich and the other three were from EPFL. "We were pleasantly surprised at how many high-quality project proposals were submitted," says Markus Püschel, Head of the Department of Computer Science at ETH Zurich and a member of the steering committee. He believes that the large number of applications is an indication of the value and fruitful results already accrued from the longstanding cooperation between the two universities and Microsoft.

Interacting with flying robots and energy-efficient memory systems

Otmar Hilliges, a 34-year-old assistant professor, is one of the successful project applicants. The young computer scientist from ETH Zurich studies the interaction between people and computers. For his project, he and Dr. Shahram Izadi from Microsoft Research are investigating how flying robots can work and interact with people in active scenarios. Specifically, they want to develop a platform that enables flying robots to do more than just recognise people and navigate their way around them. Thanks to their algorithms, the robots should be able to react to gestures and touch as well.

At the EcoCloud center at EPFL, Dr. Edouard Bugnion and Professor Babak Falsafi are carrying out research into energy-efficient memory architectures for data centres that can handle huge amounts of data. To do this, they are combining thousands of energy-efficient micro-servers in a way that enables them to access the memories of the other servers with a minimal time delay. The two computer scientists are working with Dr. Dushyanth Narayanan and other scientists from Microsoft Research in Cambridge to develop new applications for this system, known as Scale-out NUMA.

The other scientists receiving funding this year include Torsten Höfler and Gustavo Alonso from the Department of Computer Science and Roger Wattenhofer, a professor in the Department of Electrical Engineering at ETH Zurich. At EPFL, Professor Serge Vaudenay, Dr. Florin Dinu and Dr. Pamela Delgado were successful in their applications for project grants.

Exploiting synergies for cutting-edge research and education

The support also covers funding for doctoral student positions. The steering committee has decided on the number of funded doctorate positions per project. "This year we have decided to support as many motivated scientists as possible, rather than giving large amounts of money to just a few projects. I think we have struck a very good balance," explains James Larus, Dean of the School of Computer and Communication Sciences at EPFL. Larus is full of praise for the excellent cooperation between the two universities. "We are all pulling in the same direction and pursuing the same interests: to exploit synergies for cutting-edge research and offer our upcoming young researchers the best possible training."

The new research partnership begins today with a launch event at Microsoft Research in Cambridge, where the scientists who have been awarded funding are presenting their projects. Daron Green, Senior Director of Microsoft Research USA and a coordinator of the steering committee, is looking forward to this extraordinary opportunity for exchanging expertise. "Professors Jürg Gutknecht (ETH Zurich) and Willy Zwaenepoel (EPFL) suggested the collaboration with the two universities. All three organisations are able to bring unique perspectives and great talent to the collaboration and focus their attention on tough technical challenges. It is already clear to us that it is worth investing further in this joint research centre."

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