



Distinction

Isabelle Bellin, 16/05/2011

Hubert Garavel received the Gay-Lussac Humboldt Research Award



Hubert Garavel - © INRIA / Photo A.Eidelman

Hubert Garavel recently received the Gay-Lussac Humboldt Research Award. He is the fourth French scientist in the field of computer science to be awarded this Prize, one of his predecessors being Alain Bensoussan (1983), former chairman of INRIA. As a consequence of this award, Hubert Garavel is invited to Germany, where he will be hosted by Professor Holger Hermanns, Dean of the Faculty of Mathematics and Computer Science at the University of Saarland, with whom he has been collaborating for 10 years.

What is the Gay-Lussac Humboldt Research Award?

Holger Hermanns: The Humboldt Research Award is granted by the Alexander von Humboldt Foundation, a German foundation that was first established in 1860 and re-established in 1953 by the Federal Republic of Germany. The foundation promotes scientific excellence, academic freedom, and mutual understanding through a network of talented scientists that includes 43 Nobel Prize winners. In accordance with the foundation's policy, the Humboldt Research Award is granted to eminent foreign researchers whose fundamental discoveries, insights or new theories have had a lasting impact on their field of specialization and beyond, and who are expected to continue to produce ground-breaking results. Through this award, the Humboldt foundation supports people, not projects, and considers solely the individual excellent performance, without quotas for countries or academic disciplines. When granted to a French scientist, the award is known as "Gay-Lussac Humboldt", following a decision taken in 1981 by the French and German governments to foster closer scientific collaborations between our two nations.

What are Hubert Garavel's research interests?

Holger Hermanns: Hubert Garavel is a pioneer in formal methods and verification tools for critical industrial systems. He started his PhD in 1986 in the group of Joseph Sifakis (recipient of the 2007 Turing award) developing a very influential and forward-looking approach to compilation and efficient execution of process calculi by translation to extended Petri nets. Since 1996, Hubert Garavel has been the head and driving force of the VASY team at INRIA Grenoble, a leading European research team working on explicit-state software tools and algorithms for the analysis of concurrent systems. This is an area originally rooted in the theory of concurrent computation, but with striking practical applications in embedded system verification and in hardware and software design. Hubert Garavel is working at the forefront of practical and usable verification - strictly based on elegant algebraic principles. The persistence of his contribution to the field is outstanding, and is closely linked to CADP, a software toolbox that is unique in the field of theory, application, and implementation of explicit-state verification. CADP is widely disseminated in hundreds of universities and research institutes worldwide, and in large companies such as Airbus, Bull, and STMicroelectronics. It is applied to a spectrum ranging from educational purposes to complex industrial applications. Due to its open and extensible architecture, many analysis tools have been linked to CADP. The scientific concepts behind this toolbox make Hubert Garavel a pivotal figure in the link between the computer-aided verification research and industrial-scale verification practice.

Hubert Garavel: My long-term goal has always been to make concurrency theory applicable to real-world problems. Searching for a unified vision of parallelism, I am continuously amazed that the abstract concepts forged by Sir Antony Hoare, Robin Milner, and many others find a huge range of applications, from the micro-scale of logical gates in asynchronous circuits to the macro-scale of cloud

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Holger Hermanns is chair for Dependable Systems and Software, and Dean of the Faculty of Mathematics and Computer Science at Saarland University, the home of the largest and highest-ranked German computer science cluster, with several focussed research institutes and manifestations of the German Excellence Initiative on campus. Holger Hermanns is chair the holder of the Dutch national innovation award *Vernieuwingsimpuls*.

[Personal page of Holger Hermanns](#)

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[VASY](#) project-team

computing. I took advantage of the INRIA "project-team" model to assemble an excellent group of rare individuals skilled in both theoretical research and software development, with whom I share common goals and motivation. Our VASY team, which was ranked A+ in 2010 by the French research evaluation agency AERES, grew progressively with Radu Mateescu, Frédéric Lang, Wendelin Serwe, and recently Gwen Salaün, together with PhD students, post-docs, and expert engineers.

What are your plans following this Award?

Hubert Garavel: I intend to study the many research tools that exist for quantitative analysis of timed, probabilistic, and stochastic systems. Currently, these tools are fragmented. I would like to spend time dissecting them one by one, my goal being to design a unifying architecture that would ensure future interoperability and ease development of new tools. For this, I will be often in Germany, in Saarbrücken of course and perhaps at other Universities. My connections with Germany are going to be even stronger as I am now also working part-time with BSI, the German government agency for information technology security.

Holger Hermanns: Saarland University, located in Saarbrücken and thus right on the French-German border, will be the host institution, with already strong links with other German and international academic institutions. The links with INRIA are indeed expected to be further strengthened due to the Gay-Lussac Humboldt Research Award. Hubert Garavel is going to play a key role in manifold activities on merging functional verification and performance evaluation for distributed and embedded systems. This is not an easy task, as we have to combine upfront, rapidly evolving research on new semantic models with software implementation, which require more stability. An exciting challenge!