HiPEAC: A European Network Built to Last

BY KOEN DE BOSSCHERE, MARC DURANTON, AND MADELEINE GRAY

HIGH PERFORMANCE AND Embedded Architecture and Compilation (HiPEAC) was founded

in 2004 as a European research network. In the last 15 years, it has grown from 70 to 2,000 computing specialists, including 200 from industry, making it the largest such network in the world. Membership is free, but members are expected to be active participants in the network.

Today, HiPEAC is a hub for European researchers and industry representatives in the full range of computing systems (from sensor nodes to exascale systems).^a It has received uninterrupted funding from the European Commission for helping to implement Europe's policy to strengthen the computing community throughout the region.^b

^a <https://www.hipeac.net/>

^b HiPEAC is funded by the European Commission under grant agreement 779656.

The HiPEAC staff hosts a one-week summer school program for computer architects and tool builders working in the field of high-performance computer architecture and compilation for computing systems.

The HiPEAC Conference is the second largest European research gathering in computing and it is the flagship event of the network. It pioneered the innovative journal-first publication model, which means ACM's *Transactions on Architecture and*

Code Optimization (TACO) evaluates and published papers submitted for the HiPEAC Conference and authors of accepted papers receive an invitation to present their work at the conference. This year, all papers published in ACM TACO will be open access, which follows the requirement that all published work resulting from European-funded research programs must be open access. By combining the conference with a rich program of workshops, tutorials, poster sessions, and an industry exhibition, the HiPEAC Conference has become the premier networking event for the European comput-

ing community.^c

The ACACES summer school is another major event hosted by HiPEAC, attracting more than 200 attendees from academia and industry for a full week of advanced courses taught by world-class experts. Many attendees have credited ACACES as a life-changing event at the start of their career.

Since 2012, HiPEAC has actively invested in attracting and retaining talent in Europe. The network's careers services, in combination with its jobs and internship portal,^d support HiPEAC members in their

^c <https://www.hipeac.net/events>

^d <https://www.hipeac.net/jobs/>

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search for skilled talent, or to land the perfect job in Europe. In particular, we try to match around 200 Ph.D. students yearly with the many open computing positions throughout Europe.

HiPEAC Vision, an influential biennial roadmap report produced by the community, contains a detailed SWOT-analysis of the European computing industry, including trends in the market, society, and in science and technology and provides a series of recommendations to strengthen Europe's position in the field. It is one of the key inputs in defining future research programs at the European level.^e

Lessons Learned

HiPEAC's impact in Europe's computing community takes many paths. Beyond the services it provides members, it also fosters more international collaboration, a larger supporting network, and has lessened the region's brain drain. For example: HiPEAC has distributed approximately 400 mobil-

ity grants, which have led to numerous scientific collaborations as well as the creation of start-ups and permanent hires. The HiPEAC jobs portal publishes over 500 career opportunities per year. Over 200 scientific projects have used the HiPEAC platform for promotion, of which 50 are HiPEAC stakeholder members. The network also functions as an effective bidirectional communication channel between European policy makers and the European research community at large.

It took HiPEAC about 10 years to create a strong and attractive brand, to build a large and vibrant community, and to discover the services the community valued most. HiPEAC's decision to hire a dedicated, professional staff to run the network rather than rely solely on volunteers was a turning point. Building an effective international network requires time, resources, vision, and perseverance. It simply cannot be done in a couple of years, it is difficult to accomplish with only volunteers, and

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it cannot survive without funding.

Europe is neither the U.S. nor China. It takes its own approach to building a robust, innovating computing community, one that fits the European strengths, and provides answers to European challenges and European ways of thinking. In addition to investing in technology areas like artificial intelligence, cyber security and cyber-physical systems, Europe should also invest in its small and medium-sized enterprises, which form the backbone of its economy. For example, finding solutions for societal challenges such as the rapidly ageing population

by developing the "silver economy" and investing in healthcare technologies, or focusing on its low economic growth by promoting industry 4.0; or facing environmental issues by addressing the United Nation's sustainable development goals. Europe should also invest in retraining programs for workers and in improving the digital skills of the global population.

Koen De Bosschere is a professor at Ghent University, Belgium, and HiPEAC coordinator.

Marc Duranton is a research fellow at CEA, France, and HiPEAC vision coordinator.

Madeleine Gray is dissemination officer at Barcelona Supercomputing Center, Spain, and HiPEAC communications officer.

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A presentation session during HiPEAC 18 in Manchester, U.K.

Attendees of HiPEAC 17 congregate at the Waterfront Congress Centre in Stockholm, Sweden.