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Illinois collaborator named first CUDA research center in Spain

By *kgudeman*
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April Dahlquist, CSL

The Barcelona Supercomputer Center [1] (BSC), which enjoys a close relationship with researchers in the Coordinated Science Laboratory, has been named Spain's first CUDA Research Center. The designation, given by NVIDIA [2], recognizes BSC's commitment to research and new technology development.

Part of the Universitat Politècnica de Catalunya (UPC), BSC has longstanding ties with Illinois engineering faculty and its UIUC counterpart, the National Center for Supercomputing Applications [3]. Nacho Navarro, a faculty member from UPC, has helped build the alliance by traveling frequently to Illinois as a visiting researcher at CSL. The appointment began in 2001, when he spent his sabbatical working with Wen-mei Hwu, a professor of electrical and computer engineering and pioneer in parallel computing.

"I am very thankful to the CSL for the opportunities of working together that we have had," Navarro said. "This has been a great collaboration that has evolved into a great friendship with Wen-mei, his outstanding team and related CSL faculty."

Since 2001, BSC and Illinois have collaborated on research and have published many joint papers. In addition, BSC Director Mateo Valero helped develop the "roadmap" for NCSA's Petascale Computing project Blue Waters, which will be one of the most powerful supercomputers in the world when it comes online in 2011.

The relationship reached a high point this past July with a parallel programming summer school at BSC, co-sponsored by Illinois and co-taught by former NVIDIA CSO David Kirk, Hwu, Navarro, and CSL researcher John Stratton, a Ph.D. candidate in electrical and computer engineering. The summer school culminated with NVIDIA naming BSC a CUDA Research Center.

Navarro says the enhanced relationship between the two universities paves the way for

more collaboration in the future. Already, researchers are working together to advance the Global Memory for Accelerators (GMAC) project, which aims to simplify the programmability and exploit the underlying shared resources of GPU-accelerated applications in order to reach 100x speedups. Those include MRI processing, for example, allowing patients to receive test results in minutes instead of hours or days. This work was presented at GCT2010, the NVIDIA GPU Technology Conference, in San Jose, September 2010.

In addition, it will encourage a greater transfer of students between the two schools.

“The best thing about this collaboration, in addition to the publications and products, is that UPC students have contact with top researchers and students,” Navarro said. “They learn a lot while they are [in Illinois] and they become confident their research can have a real impact.”

Dr. Isaac Gelado is a perfect example of the exchange at work. Previously a researcher and instructor at UPC, he took Navarro’s suggestion to visit CSL during summer and winter breaks. Now, Gelado has finished his Ph.D. and is a Visiting Scholar with Hwu’s Impact research team.

“U.S. researchers have a mentality that’s very oriented toward achieving practical results,” Gelado said. “While in Europe, it is more about ideas. We can put these two different mentalities together, the practicality and the ideas, and take the best things from both.”

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Coordinated Science Laboratory
University of Illinois at Urbana-Champaign
1308 W Main Street
Urbana, IL 61801-2307

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