1 July 2008

By: Ionut Arghire, Hardware Editor

First CUDA Center of Excellence Appointed by NVIDIA

To become one, universities have to teach one special class and use CUDA technology in their labs

NVIDIA Corporation, a leader in graphics technologies, announced yesterday, together with the University of Illinois at Urbana-Champaign (UIUC), that the University has been appointed as the world's first CUDA Center of Excellence. The Santa Clara company also made a $500,000 donation to UIUC, in addition to the appointment, to facilitate the development of parallel computing and to ensure the continuation of its research programs. "The CUDA Center of Excellence program rewards schools that truly embrace the concept of parallel processing as the future of computing," said Dr. David Kirk, chief scientist at NVIDIA. "Schools receiving this accreditation integrate the CUDA software environment into their curriculum to help their students harness the capabilities of these new parallel processing architectures. As one of the country's leading schools in this field, I am personally delighted to appoint UIUC as our first CUDA Center of Excellence."One of the first research groups that enhanced the parallel architecture of the GPU was the Theoretical and Computational Biophysics Group at UIUC, which used this to speed up its research in the computational biophysics area. NAMD/VMD, a well known parallel molecular dynamics application capable of analyzing large biomolecular systems, has been successfully accelerated by the group. The donation is meant to help researching, as well as other researchers from the university, hoping they will make great discoveries. "We're very excited to partner with NVIDIA and anticipate that together we will achieve breakthroughs in biomedicine, leading to a better understanding of disease and more effective treatments," said Klaus Schulten, Swanlund Professor of Physics and director of the Theoretical and Computational Biophysics Group at Illinois. "This generous gift will be a great stimulus for Illinois' team of outstanding young programmers. It will help to extend their ranks and equip them with the necessary tools to advance computing in decades to come."In order to become CUDA Centers of Excellence, universities need to use CUDA technology in their research in several labs, and also teach a CUDA class. For its part, NVIDIA comes with founding and equipment donations, and it also helps for the setting up of a GPU computing cluster. Last year, NVIDIA donated to UIUC 32 QuadroPlex model four systems containing 64 GPUs for a 16-node CUDA technology cluster. The $800,000 cluster is being administrated by NCSA. Computing research is only one area of interest at the Coordinated Science Laboratory at the University of Illinois. CSL was created by NASA about 60 years ago, and it develops technologies in fields like defense, medicine, environmental sciences, robotics, life-enhancement for the disabled and aeronautics.Prof. Wen-Mei Hwu is the Principal Investigator of the first CUDA Center of Excellence. Prof. Hwu and Dr. Kirk had a previous collaboration in teaching one of the nation's first courses for advanced students in massively parallel processing. According to Hwu, "Future increases in computational performance are directly rooted in massively parallel hardware such as many-core GPUs. The biggest challenge today is in parallelizing code to take advantage of the hardware most successfully. NVidia's groundbreaking CUDA solution is a significant step in this direction. We are very proud to host the first CUDA Center of Excellence at Illinois and to be able to partner with an industry leader like NVidia as we move forward".NVIDIA CUDA technology is an award-winning software development kit (SDK) and C-compiler is used in the development of computing applications on graphics processing units (GPUs).