



Sony Group, Toshiba and IBM Renew Cell Broadband Engine (TM) Center of Competence with Georgia Tech

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www.cc.gatech.edu - Georgia Tech College of Computing Stefany Wilson, 404-312-6620
stefany@cc.gatech.edu The Georgia Tech College of Computing today announced the renewal of the Sony Corporation/Sony Computer Entertainment Inc. (Sony Group)-Toshiba-IBM Center of Competence (STI Center), based on Georgia Tech's exceptional work in multiple areas of research and evangelism for the Cell Broadband Engine(TM) (Cell/B.E.) technology. Through Georgia Tech's efforts, the STI Center has been responsible for creating and disseminating software optimized for Cell/B.E. systems, and for performing research on the design of Cell/B.E. systems, algorithms and applications. In conjunction with this renewal of the STI Center, Georgia Tech is announcing a series of new research projects that are being undertaken at the center to develop applications and productivity tools based on the Cell/B.E. microprocessor.

Georgia Tech also announced today that it will host the Second Annual Cell/B.E. Processor Workshop from July 10-11, 2008, focusing on software, tools and applications for the Cell/B.E. processor, including high performance computing applications and programmability tools. The two-day workshop is sponsored by Sony Group, Toshiba and IBM and will be held at the Klaus Advanced Computing Building on Georgia Tech's campus. More information on the workshop may be found at <http://sti.cc.gatech.edu/>.

The STI Center of Competence was created at Georgia Tech to test the boundaries and demonstrate the extreme performance of the Cell/B.E. architecture. "Today, we are carrying out the vision we always intended - to generate breakthrough innovations using Cell/B.E. technologies working hand-in-hand with researchers at Sony Group, Toshiba and IBM," said David A. Bader, professor and executive director of High-Performance Computing in the Georgia Tech College of Computing. "We are very encouraged that our initial research results are showing the multi-faceted applicability of this technology."

One of the key research challenges that the collaborators will address through continued applied research is the use of Cell/B.E. technology to better monitor an aircraft's structural safety in commercial and military airplanes. Researchers will develop Cell/B.E. based data-processing software that will expeditiously and accurately monitor structural components in flight by measuring and recording an aircraft's vibrations through a distributed network of sensors. Although a commercial signal processing application for airplanes is a long term plan, researchers are working to develop a solid software foundation in the labs.

"IBM has invested in a strategy that applies the use of technology to solve grand challenges with our trusted university partners," said Jai Menon, IBM Fellow, vice president, Technical Strategy and University Relations. "In our collaboration with Georgia Tech, we are working together to better predict airline mechanical failures to make flying in airlines safer for passengers like you and me."

The other joint research projects in productivity enhancements include:

- A useful signal processing kernel needed for oil and gas exploration and seismic monitoring;
- Data compression, used for file compression or reducing the size of messages sent between computers required in multiple industries;
- Financial services applications for consolidated debt optimization, as well as European and American options pricing;
- Encryption libraries for securing communications for privacy;
- High-speed multimedia codecs, such as MPEG2 and JPEG2000 encoders and decoders;
- Bioinformatics, such as DNA sequence alignment and comparison;
- Software productivity enhancement tools that involve a cross-platform profiler, performance estimation and tuning system with IDE type features.

-- Single-source automatic translator for generating PPU and SPU codes from a monolithic C/C++ application.

"We anticipate a paradigm shift in computing and our collaboration with the Georgia Tech College of Computing will create innovative applications for Cell/B.E. processors," said Yasu Yokote, general manager, CELL Application Development Center, Sony Corporation. "For a year STI Center created at Georgia Tech, they created software productivity enhancement tools, which are valuable for moving legacy code bases to CELL/B.E. and will generate tremendous value to all Cell-based products."

"Within a year of the opening of the Center of Competence at Georgia Tech, researchers are already generating outstanding results on Cell/B.E.," said Mitsuo Saito, Chief Fellow, Toshiba Corporation Semiconductor Company. "The future will see growing demand for multi-core processor applications, and we are delighted that the Center is playing a key role in anticipating and responding to such demand."

About the Georgia Tech College of Computing

The Georgia Tech College of Computing is a national leader in the research and creation of real-world computing breakthroughs that drive social and scientific progress. With its graduate program ranked 9th nationally by U.S. News and World Report, the College's unconventional approach to education is pioneering the new era of computing by expanding the horizons of traditional computer science students through interdisciplinary collaboration and a focus on human centered solutions. For more information about the College of Computing, its academic divisions and research centers, please visit www.cc.gatech.edu.

About the Cell Broadband Engine

The revolutionary Cell/B.E. processor is a breakthrough design featuring a central processing core, based on IBM's industry leading Power Architecture(TM) technology, and eight synergistic processors. Cell/B.E. "supercharges" computation-intensive applications, offering fast performance for computer entertainment and handhelds, virtual-reality, wireless downloads, real-time video chat, interactive TV shows and other "image-hungry" computing environments. The processor was created through a collaboration between Sony Group, Toshiba Corporation (Toshiba) and IBM.

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Upcoming Workshop to Focus on Developing Commercial Applications and Productivity Software for Cell Broadband Engine (Cell/B.E.) Processor

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