



# CALL FOR PAPERS

## 2007 ACM International Conference on Computing Frontiers



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The increasing needs of present and future computation-intensive applications have stimulated research in new and innovative approaches to the design and implementation of high-performance computing systems. These challenging boundaries between state of the art and innovation constitute the computing frontiers, which must push forward and provide the computational support required for the advancement of all science domains and applications. This conference focuses on a wide spectrum of advanced technologies and radically new solutions, and is designed to foster communication between the various scientific areas and disciplines involved.

Papers are sought in the following research areas and on any related topics:

- **Non-conventional computing:** As we reach the limits of CMOS we need to explore non-conventional architectural paradigms such as quantum computing, analog computing, biological computing, and reversible computing.
- **High-performance embedded architectures:** The goal of future embedded systems is to extract high-performance at low power for specific applications often under real-time constraints. However they must remain highly programmable and adaptable at low cost. They can include high-performance general or special purpose processors, and reconfigurable (adaptable) architectures.
- **High-performance general-purpose architectures:** Future micro-architectures will be multiprocessor-based. The critical issues will remain harnessing thread-level parallelism through new programming models and new architectural paradigms such as transactional memory, fighting the memory wall, and fostering closer interactions between all levels of hardware and software.
- **Technology-driven architectures:** With increased miniaturization of CMOS, architectures must help solve various issues related to the technology such as power consumption, design complexity, impact of wire delay, and reliability.
- **Massively parallel systems (MPS):** Fine grain and coarse grain systems, very large-scale shared-memory and message-passing architectures, software support for MPS, grid computing, prototypes and real machines based on MPS technologies.
- **Software for emerging systems:** Virtualization, programming models, high-productivity tools, and mapping of large applications on massively parallel systems.

Submit an electronic copy of your paper (PDF formatted), double-spaced and not exceeding 6000 words, following the instructions at the conference site <http://www.computingfrontiers.org>. Workshop proposals are solicited and should be submitted to Lucian Prodan at [lprodan@cs.upt.ro](mailto:lprodan@cs.upt.ro) by December 8, 2006.

### IMPORTANT DATES

- **Abstract due:** December 1, 2006 (11:59 PM, PST)
- **Paper due:** December 8, 2006 (11:59 PM, PST)
- **Notification:** February 9, 2007
- **Final paper:** March 9, 2007