



CALL FOR PAPERS

2012 ACM International Conference on Computing Frontiers



May 15-17, 2012, Cagliari, Italy



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The increasing complexity, performance, and energy efficiency needs of current and future applications require novel and innovative approaches for the design of computing systems. Boundaries between state of the art and revolutionary innovation constitute the computing frontiers that must be pushed forward to provide the support required for the advancement of science, engineering, and information technology. The *Computing Frontiers* conference focuses on a wide spectrum of advanced technologies and radically new solutions relevant to the development of computer systems.

Authors are invited to submit full papers to the main conference and **Ph.D. students are invited to submit an extended abstract for a special Ph.D. forum and poster session. The accepted Ph.D. forum extended abstracts will be included in the conference's proceedings.** We seek contributions on novel computing paradigms, computational models, application paradigms, computer architecture, development environments, compilers, or operating environments. Papers are solicited in, but not limited to, the following areas:

- Applications, programming, and performance analysis of advanced architectures
- Next-generation high performance computing systems
- Accelerators: many-core, GPU, custom, reconfigurable, embedded, and hybrid
- Defect- and variability-tolerant designs for dependable computing
- Power and energy efficiency: architectures, compilers, and algorithms
- Virtualization and virtual machines
- Cloud-, internet-scale, service-oriented and smart infrastructure computing
- Compilers and operating systems: adaptive, run-time, and auto-tuning
- System management and security
- Impact of novel technology (NV memory, silicon photonics, quantum computing)
- Computational neuroscience, neuromorphic, and biologically-inspired architectures
- Computational aspects of intelligent systems and robotics
- Reconfigurable, autonomic, organic, and self-organizing computation and systems
- Interfaces and visualization for emerging applications and systems
- Novel frontiers in computational science and scientific data repositories
- Storing, managing, analyzing, and searching large data sets ("big data")
- Sensors and sensor networks

Two Special Sessions

This year Computing Frontiers will have two special sessions of invited talks on projects from the European Commission's Seventh Framework Programme and artificial intelligence for games.

Full papers must be submitted through the conference web site and should not exceed 10 double-column pages and extended abstracts cannot exceed 4 double-column pages in standard ACM conference format, including figures, tables, and references. Papers will be reviewed in a double blind fashion. This means that submissions must be anonymous. When submitting for a double blind process, authors need to take special care in removing their names and any hints that might reveal their identities to the reviewers. Pacific Northwest National Laboratory and Delft University of Technology will present best paper awards dedicated to the memory of Jarek Nieplocha and Stamatis Vassiliadis. As per ACM guidelines, at least one of the authors of accepted papers is required to register for the conference. Additional submission guidelines will be available on the conference web site.

Important Dates (EXTENDED DEADLINES)

Paper Submission Deadline

January 25th, 2012

Ph.D. Forum Deadline

February 15th, 2012

Author Notification

March 7th, 2012

