

FCCM'10 Call for Papers

The 18th Annual International IEEE Symposium on Field-Programmable Custom Computing Machines

Embassy Suites--Concord, Charlotte, North Carolina

May 2nd-4th, 2010

www.fccm.org

The IEEE Symposium on Field-Programmable Custom Computing Machines is a forum to present and discuss new research on the use of reconfigurable computing, spatial computing, and application-specific architectures that exploit the unique features of FPGAs and other reconfigurable hardware. Of particular interest are papers in these areas that emphasize high-performance and/or low-energy computation. This conference focuses on a wide variety of topics related to custom computing, and seeks submissions from the main areas below.

Architectures

- Architectures for high-performance and/or low-power configurable computing
- New spatial architectures with immense parallelism but different basic components than FPGAs
- System-level architectures for reconfigurable computing in either real-time or non-real-time systems
- Hybrid architectures that integrate a mix of coarse, fine, special-purpose, and general-purpose hardware
- Implications and effects of nanotechnology on reconfigurable computing (and vice versa)

Languages and Compilers

- New languages and development environments to describe spatial or hybrid applications
- Tools to make run-time reconfiguration more accessible to application designers
- Compilation and CAD techniques for reconfigurable computing systems and other spatial computers

Run-Time Systems and Run-Time Reconfiguration

- Operating system techniques to manage run-time reconfiguration of resources in reconfigurable computing or spatial computing systems
- Run-time CAD algorithms to support the above techniques or improve fault tolerance/avoidance
- Use of reconfigurability to build evolvable or adaptable computing systems
- Novel uses of run-time reconfiguration in application-specific systems

Applications

- Novel applications that use reconfigurability to customize hardware for scientific computation, mobile communications, medical image processing, data and communication security, network infrastructure and other embedded systems
- Comparison of application implementations on different spatial hardware, such as GPGPUs, multi-core processors, and FPGAs

Open-Source Tools and Applications

This year we particularly encourage papers introducing CAD tools, compilers, benchmark libraries, and/or benchmark circuits that are open source and publicly available. To be considered under this heading, submissions must include a web link to the source accessible by the reviewers, and make the source publicly-available upon acceptance. For these papers, evaluation will be based more on the usefulness to the community than research novelty.

Submissions

FCCM solicits both 8-page full paper and 4-page short paper submissions. All submissions should be written in the English language, and are due by January 12th, 2010 through the online submission link that will be available on the FCCM website starting in late December, 2009. Authors will be notified by February 25th. Papers should use the formatting template linked at the FCCM website.

Program Co-Chairs:

Katherine Compton
University of Wisconsin-Madison

Mike Wirthlin
Brigham Young University

Publicity Chair:

Mark Chang
Olin College of Engineering

General Co-Chairs:

Ron Sass
UNC-Charlotte

Russell Tessier
*University of Massachusetts,
Amherst*