

## Call for Papers

### Workshop on Interaction between Operating System and Computer Architecture

#### IOSCA 2005

*Held in conjunction with 2005 IEEE International Symposium on Workload Characterization*

*Saturday October 8 2005, Austin Texas*

#### Workshop Overview and Topics:

Operating systems (OS) constitute a major software component and are essential to any computing system. Commercial and server workloads such as online transaction processing, database, file/e-mail servers involve significant OS activity. The interaction between OS and emerging architecture (e.g. SMT and multi-core) / technology (e.g. hardware virtualization) are projected to continuously increase. Currently, much of the research that influences the design of computer systems largely focuses on user-level applications. To optimize system performance, it is important to merge the two constantly evolving, but many times quite independently components –computer architecture and OS to address new design challenges.

This workshop focuses on characterizing, modeling and optimizing the interaction between OS and hardware in the light of emerging architecture paradigms, workloads and computing technology. Topics of particular interest include, but are not limited to:

- Characterization of OS activity in emerging workloads
- Frameworks and tools for full-system simulation
- Techniques for mitigating the bottlenecks of OS execution
- OS-aware microarchitecture (e.g. predictor, cache and execution unit) design
- Techniques to reduce the interference between OS and user applications
- Workload variability issues in complete system evaluation
- Hardware accelerators for key OS services (e.g. networking, data copying)
- Performance, power, dependability and security in OS
- Effect of OS mechanisms (e.g. scheduling) on emerging architecture (e.g. SMT and multi-core CMP)
- OS-intensive benchmark suite
- Implication of hardware virtualization and virtual machines on OS design

Furthermore, the workshop aims at providing a forum for researchers and engineers from academia and industry to discuss their latest research in computer architecture and OS.

#### Organizer

Tao Li, University of Florida (taoli@ece.ufl.edu)

#### Publicity/Publication Chair

James Poe, University of Florida (jpoe@ufl.edu)

#### Program Committee:

Brad Calder, University of California, San Diego  
Eugene John, University of Texas at San Antonio  
Hsien-Hsin S. Lee, Georgia Institute of Technology  
Steve Reinhardt, University of Michigan  
Juan Rubio, IBM Austin Research Lab  
Anand Sivasubramaniam, Pennsylvania State University  
Yan Solihin, North Carolina State University

#### Submission Guidelines:

- Submit a formatted (IEEE double column) full paper (6 pages) or an extended abstract (3 pages) including complete author list to Tao Li <taoli@ece.ufl.edu> by Sept. 16, 2005.
- Notification of acceptance will be sent out on Sept. 23, 2005.
- A post-workshop proceedings, containing abstracts, full papers and/or talk slides, will be distributed