

Workshop on Parallel and Distributed Systems: Testing, Analysis, and Debugging (PADTAD - VIII), July 12-13, 2010

In conjunction with the International Symposium on Software Testing and Analysis
([ISSTA 2010](#), July 12-16), Trento, Italy

The **PADTAD 2010** workshop is a two-day event at **ISSTA 2010**, focusing on techniques and systems that aid in the testing, analysis, and debugging of multi-threaded, parallel and distributed applications and systems. The workshop has a practical and applied emphasis on systems that have been implemented in (at least) prototype form, but also welcomes submissions on teaching related issues on these topics.

Although debuggers and profilers are the traditional examples of testing and debugging tools on sequential machines, there are issues unique to concurrent systems that are not commonly addressed. Examples of such significant challenges include deadlock, load imbalance, data sharing patterns, race conditions, and contention. Established testing techniques and tools are insufficient for non-sequential programs because they largely ignore timing and scheduling, which are inherent in concurrent systems. Beyond the shortcomings of current tools and technologies, the rising generation of programmers and designers need to be more versed in concurrent systems design and programming.

Education and curriculum are critical to realizing the full potential of multi-core technology and we need to begin training the students who will make multi-core happen on a large scale. As such, we strongly encourage abstracts and regular papers devoted to education and curriculum at all levels, including pedagogy, exercises, projects, experience reports, etc.

PADTAD welcomes papers and experience reports from software development and testing practitioners. We are looking for papers that succinctly address practical software testing and quality improvement, presenting empirical results or reporting on open problems. All industrial papers should discuss broader implications and usage of the specific topic and will be accepted to the PADTAD industrial track.

The following is a broad list of topics of interest when referring to multi-threaded, parallel, or distributed applications:

- Code review techniques and tools
- Curriculum and education for multi-core design, programming, testing, debugging and analysis
- Data-race and deadlock detection
- Debugging advanced network interface technologies (e.g., Myrinet, VIA)
- Domain-specific languages for testing, debugging and analysis
- Fault injection and analysis
- Formal specification and verification of programming libraries and programs
- Functional and structural testing and debugging
- Performance testing, debugging, and analysis
- Programming techniques and methodologies (requiring less testing or debugging)
- Replay and similar techniques for multi-threaded applications
- Static and dynamic program analysis
- Test generation algorithms and tools
- Testing and debugging techniques for time-dependent bugs in hardware and software
- Testing, debugging, and analysis of MPI, OpenMP, and other library based applications
- Testing, debugging, and analysis of domain-specific languages
- Testing, debugging, and analysis of fault tolerant applications and systems
- Testing, debugging, and analysis of real-time applications and systems
- Testing, debugging, and analysis of transactional memory programs
- Tools for testing, debugging, and analysis
- Techniques for multi-core processors

Accepted papers, as well as education session abstracts, will be published in CD-ROM proceedings and will be included in the ACM Digital Library.