

Preface

This volume contains the papers presented at LCPC 2016: the 29th International Workshop on Languages and Compilers for Parallel Computing held during September 27–29, 2016, in Rochester, New York.

Since its founding in 1988, the LCPC workshop has been a leading venue for research on parallelizing compilers and related topics in concurrency, parallel languages, parallel programming models, runtime systems, and tools. The workshop spans the spectrum from foundational principles to practical experience, and from early ideas to polished results. LCPC encourages submissions that go outside the scope of scientific computing and enable parallel programming in new areas, such as mobile computing and data centers. The value of LCPC stems largely from its focused topics and personal interaction. This year’s location, in Rochester, NY, was both scenic and convenient. September weather is beautiful, as is the university campus, located at the confluence of the Genesee River and the historic Erie Canal.

Specific topics of LCPC 2016 included:

- Compiling for parallelism and parallel compilers
- Static, dynamic, and adaptive optimization of parallel programs
- Parallel programming models and languages
- Formal analysis and verification of parallel programs
- Parallel runtime systems and libraries
- Performance analysis and debugging tools for concurrency and parallelism
- Parallel algorithms and concurrent data structures
- Parallel applications
- Synchronization and concurrency control
- Software engineering for parallel programs
- Fault tolerance for parallel systems
- Parallel programming and compiling for heterogeneous systems

There were 26 submissions. Each submission was reviewed by at least three, and on average 3.5, Program Committee members. The committee decided to accept 23 papers, of which 20 are regular papers (up to 15 pages) and three are short papers (up to five pages).

The workshop program includes three keynotes:

- “Parallel Computation Models and Systems, Dataflow, Coelets, and Beyond” by Guang R. Gao of University of Delaware
- “Towards High-Level High-Performance Software Development” by P. (Saday) Sadayappan of Ohio State University
- “The Multi-core Problem as an Algorithmic Problem” by Leslie Valiant of Harvard University

There was also one invited talk on “Tapir: Embedding Fork-Join Parallelism into LLVM’s Intermediate Representation” by Tao Schardl of MIT.

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