

Message from the Chairs

The 26th Workshop on Languages and Compilers for Parallel Computing was held in September 2013 in San Jose, California, USA. More than 50 researchers from around the world gathered together to present their latest results and exchange ideas on topics ranging from parallel programming models, compiler analysis techniques, parallel data structures and parallel execution models, to GPGPU and other heterogeneous execution models, code generation for power efficiency on mobile platforms, and debugging and fault tolerance for parallel systems.

The Program Committee, with the help of external reviewers, selected 20 papers out of 44 submissions for presentation at the workshop. Each paper had at least three reviews and was extensively discussed in the committee meeting.

We were honored to have two outstanding keynote addresses at LCPC 2013. Prof. Katherine Yelick, from University of California Berkeley and Lawrence Berkeley National Laboratory, presented “Avoiding, Hiding and Managing Communication”. She discussed how new systems are constrained in terms of both power density and energy, and require new programming models as well as algorithmic work to reduce the amount of communication. She demonstrated how PGAS languages reduce the communication costs through overlap, caching and aggregation. As communication hierarchies are becoming more complex (memory systems and interconnect), new language and compiler techniques need to be developed. She also discussed work done in her team on new parallel algorithms that use structure to reduce the amount of communication, and discussed the challenges to automate such methods through compiler transformations and auto-tuning.

David Sehr from Google presented our second keynote. He discussed compilation technologies for executing native code in the browser. Browsers are currently available on all platforms, and thus provide a common environment to deploy applications. However, there are both performance and security considerations when executing arbitrary code off the web into a complex engine such as the browser. David presented Google’s design of Native Client (NaCL) and discussed the compiler challenges to produce efficient code capable of running games at native speed. He concluded the keynote with a live demonstration of the system.

In addition to the paper presentations, we were fortunate to have six invited speakers who provided insights into new technologies and challenging research directions. We would like to thank the speakers: Benedict Gaster (Qualcomm), Rastislav Bodik (UC Berkeley), Jaejin Lee (Seoul National University, Korea), Samuel P. Midkiff (Purdue University), Lawrence Rauchwerger (Texas A&M University), and George Almasi (IBM Research).

The success of the LCPC 2013 workshop would not have been possible without help from many people. We thank the Program Committee members for their time and effort in reviewing papers. We thank Nancy May and Pamela Millart from Qualcomm for their help with the local organization. We thank the Qualcomm admin staff for

providing support hosting the workshop. The LCPC Steering Committee, David Padua, Lawrence Rauchwerger, Alex Nicolau, and Rudi Eigenmann, provided continuous support and encouragement.

We also thank Intel Corp. for their generous support.

And finally, we would like to thank all the authors who submitted to LCPC 2013. They made the workshop enjoyable.

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