



From the Program Co-Chairs of Hot Chips 20

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On behalf of the Program Committee, we are pleased to welcome you to the 20th Annual Hot Chips Symposium.

We received sixty-four (64) submissions this year that covered nearly all areas of the semiconductor and computing systems industry. The fifteen-member committee carefully reviewed all submissions and selected the top twenty-five (25) that best represent the breadth and depth of our field. As usual, the program features the latest processor designs for server and client systems, video and multimedia systems, networking chips, and FPGA devices. The program also reflects exciting trends and developments. Two talks will preview visual computing designs that offer Tflops-level performance at consumer prices. We have included talks on heterogeneous and domain-specific designs for systems that range from handsets to supercomputers. We are also happy to feature three excellent talks from academic projects.

The most pervasive trend at this time is the widespread adoption of multi-core designs across all industry domains. Eighteen of the twenty-five talks in the program cover various aspects of multi-core technology ranging from processor core design to memory system organization and from system-level issues to performance optimizations. Designs with hundreds of cores, transactional memory, and support for massive data-level parallelism are some of the highlights in the program. The multi-core trend is also apparent in this year's tutorials. The first tutorial reviews the challenges and upcoming technologies for providing multi-core designs with high bandwidth access to the memory system. The second tutorial introduces the CUDA programming models for data-parallel computing on GPU and multi-core systems.

For the keynotes, we selected two motivating talks on far-reaching topics. The first keynote will discuss the technology behind cars that drive themselves, an application that builds upon high performance chips and has the potential to revolutionize the transportation industry. The second keynote will review the use of semiconductors for solar energy generation. For the panel discussion, a distinguished group from industry and academia will review 20 years of Hot Chips, summarize the lessons learned, and discuss the directions and trends for the semiconductor industry.

The high quality of this year's program is the direct result of the effort of the members of the program committee, all of whom worked hard to solicit, select, and improve presentations. We would also like to thank Chuck Moore, Don Draper, and John Nickolls for putting together the tutorials and Nick Tredennick for organizing the panel discussion. The members of the organizing committee worked equally hard to provide the best possible setup for a successful symposium. An incredible amount of effort has gone into organizing tasks that we all take for granted such as high quality proceedings, online registration, and meals. Finally, we acknowledge the effort of all speakers, without whom there would be no conference.

Finally, we would like to thank you, the attendees for participating in the 20th Hot Chips. We hope the program meets your expectations and fuels your excitement for our field,

Christos Kozyrakis and Jan-Willem van de Waerd
Program Co-Chairs, Hot Chips 20
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