Wednesday, March 9
(All sessions held in Newport Coast Ballroom)

Breakfast
7:30AM - 8:30AM

Session XI
8:30AM - 9:45AM

New Compiler Optimizations
Chair: Scott Mahlke (University of Michigan)

Synthesizing Concurrent Schedulers for Irregular Algorithms, Donald Nguyen and Keshav Pingali (The University of Texas at Austin)

Exploring circuit timing-aware languages and compilation, Giang Hoang, Robert Bruce Findler, Russ Joseph (Northwestern University)

Orchestration by Approximation: Mapping Stream Programs Onto Multi-Core Architectures, Sardar M. Farhad¹, Yousun Ko², Bernd Burgstaller¹, Bernhard Scholz¹ (The University of Sydney, Yonsei University)

Session XII
10:20AM - 11:10AM

Exploiting Parallelism on GPUs
Chair: Kunle Olukotun (Stanford University)

On-the-Fly Elimination of Dynamic Irregularities for GPU Computing, Eddy Zhang, Yunlian Jiang, Ziyu Guo, Kai Tian, Xipeng Shen (The College of William and Mary)

Sponge: Portable Stream Programming on Graphics Engines, Amir Hormati, Mehrzad Samadi, Mark Woh, Trevor Mudge, Scott Mahlke (University of Michigan)

Session XIII
11:10AM - 12:00PM

Novel Performance Improvements
Chair: Kunle Olukotun (Stanford University)

Inter-core Prefetching for Multicore Processors Using Migrating Helper Threads, Md Kamruzzaman, Steven Swanson, Dejan Tumlin (UCSD)

Improving the Performance of Trace-based Systems by False Loop Filtering, Hiroshige Hayashizaki, Peng Wu, Hiroshi Inoue, Mauricio Serrano, Toshio Nakatani (IBM)
Saturday, March 5

Workshop & Tutorial 8:00AM - 5:00PM

Full-day Events

(F1) Workshop on General-Purpose Computation on Graphics Processing Units (Held in Cardiff)
David Kaeli (NEU), John Cavaos (University of Delaware)

(F2) Runtime Environments/Systems, Layering, and Virtualized Environments (Held in Del-Mar)
Alex Garthwaite (VMware), Orran Krieger (VMware)

Breakfast 7:30AM - 8:30AM
Lunch (not included) 12:00PM
Afternoon Break 3:00PM - 3:30PM

Sunday, March 6

Workshop & Tutorial 8:00AM - 5:00PM

Full-day Events

(F1) Workshop on Determinism and Correctness in Parallel Programming (Held in Cardiff)
Vikram Adve (UIUC), Luis Ceze (University of Washington), Bryan Ford (Yale)

(F2) Workshop on Multicore Systems – Architectures, Runtime Systems and Software Development (Held in Laguna & Sunset)
Mary Jane Irwin (Penn State), Mary Lou Soffa (University of Virginia)

Morning Events

(M1) Exascale Evaluation and Research Techniques Workshop (Held in Del-Mar)
David Meisner (University of Michigan)

Afternoon Events

(A1) Computing in Heterogeneous, Autonomous 'N' Goal-oriented Environments (Held in Del-Mar)
Henry Hoffmann (MIT), Marco D. Santambrogio (Polimi/MIT)

Breakfast 7:30AM - 8:30AM
Morning Break 10:00AM - 10:30AM
Lunch (not included) 12:00PM - 1:30PM
Afternoon Break 3:00PM - 3:30PM

Opening Reception and Poster Session 6:30PM - 9:30PM
Held in Newport Coast Ballroom
Sponsored by VMware

Monday, March 7

(All sessions held in Newport Coast Ballroom)

Breakfast 7:30AM - 8:15AM

Chair’s Welcome 8:15AM - 8:30AM
Rajiv Gupta (UC Riverside) and Todd Mowry (CMU)

Keynote 8:30AM - 9:45AM
The Cloud Will Change Everything
Jim Larus (Microsoft Research)

Session I 10:20AM - 11:10AM
Better Logging Support for Software Debugging
Chair: Michael Swift (University of Wisconsin-Madison)

Improving Software Diagnosability via Log Enhancement, Ding Yuan¹, Jing Zheng¹, Soyeon Park¹, Yuanwu Zhou¹, Stefan Savage² (University of Illinois, Urbana-Champaign and University of California, San Diego), ³(University of California, San Diego)

DoublePlay: Parallelizing sequential logging and replay, Kaushik Veeraraghavan, Dongyoon Lee, Benjamin Wester, Jesty Ouyang, Peter Chen, Jason Flinn, Satish Narayanasamy (University of Michigan)

Session II 11:10AM - 12:00PM
Understanding and Improving Transactional Memory
Chair: Michael Swift (University of Wisconsin-Madison)

Hardware Acceleration of Transactional Memory on Commodity Systems, Jared Casper, Taryo Oguntebi, Sungpack Hong, Nathan Bronson, Christos Kozyrakis, Kunle Olukotun (Stanford University)

Hybrid NOrec: A Case Study in the Effectiveness of Best Effort Hardware Transactional Memory, Yucheng Liu, Jianfeng Liu, Oscar Susarrey, Ramanan Sivarajah, Madanlal Musuvathi, Ali Fateh, Aditya Naik, Chinmayee Seshia (University of California, Berkeley)

Chair: Michael Spear (Univeristy of Michigan)

Lunch 12:00PM - 1:30PM

Session III 1:30PM - 2:45PM
Innovations in Memory Ordering Models for Parallel Machines
Chair: James Laudon (Google)

Efficient Processor Support for DRFx, a Memory Model with Exceptions, Abhayendra Singh¹, Daniel Marino², Satish Narayanasmay³, Todd Millerstein³, Madanlal Musuvathi³ (University of Michigan, Ann Arbor, ³University of California, Los Angeles, ⁴Microsoft Research)

RCDC: A Relaxed-Consistency Deterministic Computer, Joseph Devietti, Jacob Nelson, Tom Bergan, Luis Ceze, Dan Grossman (University of Washington)

Specifying and Checking Semantic Atomics for Multithreaded Programs, Jacob Burnim, George Necula, Koushik Sen (University of California, Berkeley)

Tuesday, March 8

(All sessions held in Newport Coast Ballroom)

Session IV 3:20PM - 4:10PM
Programming for Persistent Memory
Chair: Thomas F. Wenisch (University of Michigan)

Memosyn: Lightweight Persistent Memory, Haris Vologos, Andres Jans Taeck, Michael Swift (University of Wisconsin-Madison)

NV-Heaps: Making Persistent Objects Fast and Safe with Next-Generation, Non-Volatile Memories, Joel Coburn, Adrian M. Caullfield, Ameen Aked, Laura M. Grupp, Rajesh K. Gupta, Ranjit Jhala, Steven Swanson (University of California, San Diego)

Session V 4:10PM - 5:00PM
Enhancing Device Driver Reliability
Chair: Yuanyuan Zhou (UC San Diego)

A declarative language approach to device configuration, Adrian Schupbach, Andrew Baumann, Timothy Roscoe, Simon Peter (ETH Zurich)

Improved Device Driver Reliability Through Hardware Verification Reuse, Leonid Ryzhyk, John Keys, Balachandra Miria, Arun Raghunath, Mona Vj, Gernot Heiser (ICTA & UNSW, "Intel"

Ideas and Perspectives Session 5:30PM - 7:00PM
Chair: Ras Bodik (UC Berkeley)
Sponsored by Qualcomm

Session VI 8:30AM - 9:45AM
Novel Computing Platforms
Chair: Luis Ceze (University of Washington)

A Case for Neuromorphic ISAs, Atif Hashmi, Andrew Nere, James Thomas, Mikko Lipasti (University of Wisconsin-Madison)

Mementos: System Support for Long-Running Computation on RFID-Scale Devices, Benjamin Ransford, Jacob Sorber, Kevin Fu (University of Massachusetts Amherst, Dartmouth College)

Pocket Cloudlets, Emmanuel Koukoumidis, Dimitrios Lymberopoulos, Karin Strauss, Jie Liu, Doug Burger (Princeton University, "Microsoft Research"

Session VII 10:20AM - 12:00PM
Saving Power and Energy
Chair: Jim Larus (Microsoft Research)

Blink: Managing Server Clusters on Intermittent Power, Navin Sharma, Sean Barker, David Irwin, Prashant Shenoy (University of Massachusetts at Amherst)

Dynamic Kobs for Power-Aware Computing, Henry Hoffman, Stelios Sidiroglou, Michael Carbin, Sasa Misailovic, Anant Agarwal, Martin Rinard (MIT)