ASPLOS 2013, VEE 2013
including co-located workshops

Saturday 16th March 2013:

- VEE 2013, Ninth Annual International Conference on Virtual Execution Environments.
- WODA 2013, 11th International Workshop on Dynamic Analysis.
- GPGPU-6, Sixth Workshop on General Purpose Processing Using GPUs.
- RESoLVE, Third Workshop on Runtime Environments/Systems, Layering, and Virtualized Environments.

Sunday 17th March 2013:

- VEE 2013, Ninth Annual International Conference on Virtual Execution Environments.
- TRANSACT 2013, 8th ACM SIGPLAN Workshop on Transactional Computing.
- WoDet 2013 – 4th Workshop on Determinism and Correctness in Parallel Programming.

Monday 18th March 2013 to Wednesday 20th March 2013:

- ASPLOS 2013, Eighteenth International Conference on Architectural Support for Programming Languages and Operating Systems.

Note: Registration Desk opens at 8.00 am everyday.

Locations and Page Guide

Saturday 16th March 2013:

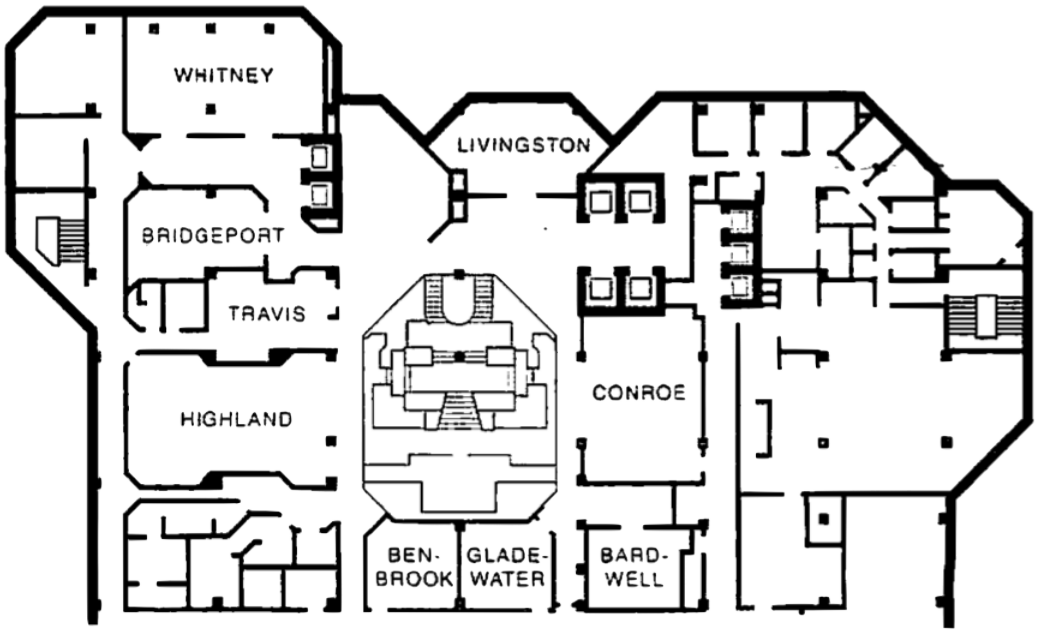
Sunday 17th March 2013:

Monday 18th March:

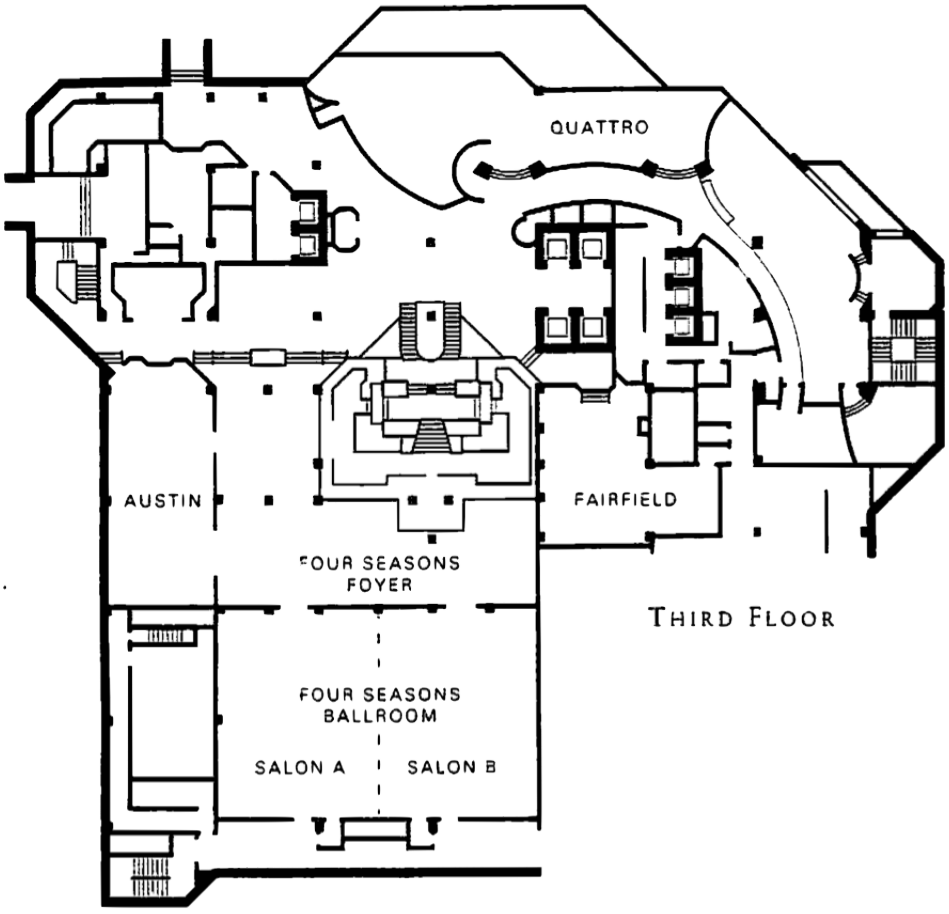
Tuesday 19th March:

Wednesday 20th March 2013:

Room Layout



SECOND FLOOR



THIRD FLOOR

VEE 2013

Saturday 16th March 2013

10.15 am: Welcome

10.30 am — 12.30 pm: Session 1 - Dynamic Binary Translation

- *SPIRE: Improving Dynamic Binary Translation through SPC-indexed Indirect Branch Redirecting*. Ning Jia, Chun Yang, Jing Wang, Dong Tong, Keyi Wang (Peking University).
- *Limits of Region-Based Dynamic Binary Parallelization*. Tobias J.K. Edler von Koch, Bjorn Franke (University of Edinburgh).
- *Improving Dynamic Optimization Through Early-Exit Guided Code Region Formation*. Chun-Chen Hsu, Pangfeng Liu (National Taiwan University), Jan-Jan Wu (Academia Sinica), Pen-Chung Yew (University of Minnesota at Twin Cities), Wei Chung Hsu (National Chaio Tung University), Chien-Min Wang, Ding-Yong Hong (Academia Sinica).
- *Superblock Compilation and Other Optimization Techniques for a Java-based DBT Machine*. Marco Kaufmann, Rainer Spallek (Technische Universität Dresden).

12.30 pm — 1.30 pm: Lunch

1.30 pm — 2.30 pm: Session 2 - Migration I

- *Efficient Live Migration of Virtual Machines*. Changyeon Jo, Jeongseok Son, Erik Gustafsson, Bernhard Egger (Seoul National University).
- *Introspection-based Memory De-duplication and Migration*. Jui-Hao Chiang (Stony Brook University & VMware), Han-Lin Li, Tzicker Chiueh (Industrial Technology Research Institute).

2.30 pm — 3.00 pm: Break

3.00 pm — 4.30 pm: Session 3 - Migration II

- *VMScatter: Migrate Virtual Machines to Many Hosts*. Lei Cui, Jianxin Li, Bo Li, Bin Shi, Kun Liu (Beihang University).
- *Optimizing Virtual Machine Live Storage Migration in Heterogeneous Storage Environment*. Ruijin Zhou (University of Florida), Fang Liu (National University of Defense Technology), Chao Li, Tao Li (University of Florida).
- *Parallelizing Live Migration of Virtual Machines*. Xiang Song, jicheng Shi, Ran Liu, Jian Yang, Haibo Chen (Fudan University).

Sunday 17th March 2013

9.15 am — 10.30 am: Keynote:

- Rethinking the Stack for Distributed Runtime Systems, Tim Harris (Oracle Cambridge).

10.30 am — 11.00 am: Break

11.00 am — 12.30 pm: Session 4 - VMM Implementation

- *Using A Dual-VM Enabled External Shell for Guest-OS Introspection, Reconfiguration, and Recovery*. Yangchun Fu, Zhiqiang Lin (University of Texas at Dallas).
- *A Lightweight VMM on Many core for High Performance Computing*. Yuehua Dai, Qi Yong, Jianbao Reng, Shi Yi, Xiaoguang Wang, Xuan Yu (Xi'an Jiaotong University).
- *Traveling Forward in Time to Newer Operating Systems using ShadowReboot*. Hiroshi Yamada (Tokyo University of Agriculture and Technology, JST CREST), Kenji Kono (Keio University).

12.30 pm — 1.30 pm: Lunch

1.30 pm — 3.00 pm: Session 5 - VM Optimisation

- *Performance Potential of Optimization Phase Selection During Dynamic JIT Compilation*. Michael Jantz, Prasad Kulkarni (University of Kansas).
- *A Modular Approach to On-Stack Replacement in LLVM*. Nurudeen Lameed, Laurie Hendren (McGill University).
- *A Framework for Application Guidance in Virtual Memory Systems*. Michael Jantz, Kshitij Doshi, Karthik Kumar, Carl Strickland, Martin Dimitrov (Intel).

3.00 pm — 3.30 pm: Break

3.30 pm — 5.00 pm: Session 6 - VMM Optimisation

- *Towards Verifiable Resource Accounting for Outsourced Computation*. Chen Chen (CMU), Petros Maniatis (Intel Labs), Adrian Perrig (CMU), Vyas Sekar (SUNY Stonybrook), Amit Vasudevan (CMU).
- *Leveraging Phase Change Memory to Achieve Efficient Virtual Machine Execution*. Ruijin Zhou, Tao Li (University of Florida).
- *Preemptable Ticket Spinlocks: Improving Consolidated Performance in the Cloud*. Jiannan Ouyang, John R. Lange (Computer Science Department, University of Pittsburgh).

WODA 2013

Saturday 16th March 2013

10.25 am — 10.30 am: Welcome, Opening.

10.30 am — 12.00 pm: Session 1 - Reliability and Monitoring

- Invited talk: *Report from the Trace Analysis Tool Shop*. Klaus Havelund (NASA/JPL Laboratory).
- *An Extensible AOP Framework for Runtime Monitoring*. Gholamali Rahnavard, Amjad Nusayr, and Jonathan Cook (New Mexico State University).

12.30 pm — 1.30 pm: Lunch

1.30 pm — 3.00 pm: Session 2 - Debugging

- *Concurrency Bug Detection and Avoidance Through Continuous Learning of Invariants Using Neural Networks in Hardware*. Mejbah Ul Alam, Rehana Begam, Sabidur Rahman, and Abdullah Muzahid (University of Texas at San Antonio).
- Invited talk: *Sampling Using Code Breakpoints*. Madan Musuvathi (Microsoft Research).

3.00 pm — 3.30 pm: Break

3.30 pm — 5.30 pm: Session 3 - Parallelization and Reliability

- Invited talk: *Self-Stabilizing Java*. Brian Demsky (UC Irvine).
- *Characterizing Active Data Sharing in Threaded Applications Using Shared Footprint*. Hao Luo, Xiaoya Xiang, and Chen Ding (Department of Computer Science, University of Rochester).
- *SimuBoost: Scalable Parallelization of Functional System Simulation*. Marc Rittinghaus, Konrad Miller, Marius Hillenbrand, and Frank Bellosa (System Architecture Group Karlsruhe Institute of Technology).

5.30 pm: Close of WODA

GPGPU-6

Saturday 16th March 2013

8.30 am — 8.45 am: Welcome.

8.45 am — 9.30 am: Keynote

- *Intel® Xeon PhiTM programmability: the good, the bad and the ugly*. Robert Geva (Principle Engineer, Parallel Language Architect, Intel).

9.30 am — 10.30 am: Session 1 - Optimizations

- *Reducing Divergence in GPGPU Programs with Loop Merging*. Tianyi David Han and Tarek Abdelrahman.
- *Split Tiling for GPUs: Automatic Parallelization Using Trapezoidal Tiles to Reconcile Parallelism and Locality, avoiding Divergence and Load Imbalance*. Albert Cohen, Tobias Grosser, Paul Kelly, J Ramanujam, P Sadayappan and Sven Verdoolaege.
- *Memory Reuse Optimizations in the R-Stream Compiler*. Nicolas Vasilache, Muthu Baskaran, Benoit Meister and Richard Lethin.

10.30 am — 11.00 am: Break

11.00 am — 12.20 pm: Session 2 - Tools and Frameworks

- *Valar: A Benchmark Suite to Study the Dynamic Behavior of Heterogeneous Systems*. Perhaad Mistry, Yash Ukidave, Dana Schaa and David Kaeli.
- *OpenCL C++*. Benedict Gaster and Lee Howes.
- *Fast Dynamic Memory Allocator for Massively Parallel Architectures*. Sven Widmer, Dominik Wodniok, Nicolas Weber and Michael Goesele.
- *Formalizing Address Spaces with application to , OpenCL, and beyond*. Benedict Gaster and Lee Howes.

12.20 pm — 2.00 pm: Lunch

2.00 pm — 2.40 pm: Session 3 - Autotuning

- *Warp Size Impact in GPUs: Large or Small?* Ahmad Lashgar, Amirali Baniasadi and Ahmad Khonsari.
- *Input-Aware Auto-Tuning for Directive-based GPU Programming*. Alberto Magni, Dominik Grewe and Nick Johnson.

2.40 pm — 3.00 pm: Break

3.00 pm — 4.00 pm: Session 4 - Algorithms

- *Atomic-free Irregular Computations on GPUs*. Rupesh Nasre., Martin Burtscher and Keshav Pingali.
- *Comparison Based Sorting for Systems with Multiple GPUs*. Ivan Tanasic, Lluis Vilanova, Marc Jorda, Javier Cabezas, Isaac Gelado, Nacho Navarro and Wen-mei Hwu.
- *Betweenness Centrality on GPUs and Heterogeneous Architectures*. Ahmet Erdem Sarıyüce, Kamer Kaya, Erik Saule and Umit V. Catalyurek.

4.00 pm — 5.00 pm: Session 5 - Applications

- *Accelerating Simulation of Agent-Based Models on Heterogeneous Architectures*. Jin Wang, Norman Rubin, Haicheng Wu and Sudhakar Yalamanchili.
- *Accelerating Financial Applications on the GPU*. Scott Grauer-Gray, William Killian, Robert Searles and John Cavazos.
- *Exploring GPU Architectures To Accelerate Semantic Comparison For Intention-Based Search*. Ozgur Gonen, Jaskirat Batra, Sonali Mahapatra and Steve Liu.

RESoLVE

Saturday 16th March 2013

All talks are 25-minute presentations, followed by 5 minute Q+A. Each session will conclude with a general discussion for 30 minutes. We aim to make the workshop as interactive and participatory as possible – this is a fun workshop, not a formal conference.

10.00 am — 10.15 am: Coffee

10.00 am — 10.30 am: Welcome

10.30 am — 12.00 pm: Programming

- *The Lazy Kernel Hacker and Application Programmer*. W. Michael Petullo and Jon A. Solworth (University of Illinois at Chicago).
- *Harnessing Performance for Flexibility in Instrumenting a Virtual Machine for JavaScript through Metacircularity*. Erick Lavoie, Bruno Dufour and Marc Feeley (Université de Montréal).

12.00 pm — 1.30 pm: Lunch

1.30 pm — 3.00 pm: Virtualization

- *Towards Proactive Resource Management in Virtualized Datacenters*. Ganesha Shanmuganathan, Ajay Gulati, Anne Holler (VMware Inc.), Shankari Kalyanaraman, Pradeep Padala, Xiaoyun Zhu and Rean Griffith (VMware Inc.).

- *vCSIMx86: a Cache Simulation Framework for x86 Virtualization Hosts*. Hui Kang (Stony Brook University).

3.00 pm — 3.30 pm: Break

3.30 pm — 5.00 pm: Security

- *Simple-to-use, Secure-by-design Networking in Ethos*. Michael Petullo and Jon A. Solworth (University of Illinois at Chicago).
- *Rollback Mechanism for Secure Communication Test with Nested Virtual Machines*. Kuniyasu Suzaki, Kengo Iijima, Akira Tanaka, Yutaka Oiwa (National Institute of Advanced Industrial Science and Technology) and Etsuya Shibayama (The University of Tokyo).

TRANSACT 2013

Sunday 17th March 2013

8.20 am — 8.30 am: Welcome

8.30 am — 10.10 am: Session 1 - STMs

Chair: Tony Hosking

- *Boosting Timestamp-based Transactional Memory by Exploiting Hardware Cycle Counters*. Wenjia Ruan, Yujie Liu and Michael Spear (Lehigh University).
- *Abort Free SemanticTM by Dependency Aware Scheduling of Transactional Instructions*. Shlomi Dolev (Ben-Gurion University of the Negev), Panagiota Fatourou and Eleftherios Kosmas (University of Crete & FORTH-ICS).
- *Enabling Speculative Parallelization via Merge Semantics in STMs*. Kaushik Ravichandran and Santosh Pande (Georgia Institute of Technology).
- *Proving Non-Opacity*. Mohsen Lesani and Jens Palsberg (University of California, Los Angeles).

10.10 am — 10.40 am: Break

10.40 am — 12.00 pm: Session 2 - Applications

Chair: Justin Gottschlich

- *Leaplist: Lessons Learned in Designing TM-Supported Range Queries*. Hillel Avni (Tel-Aviv University), Nir Shavit (MIT and Tel-Aviv University) and Adi Suissa (Ben-Gurion University of the Negev).

- *Transactionalizing Legacy Code: An Experience Report Using GCC and Memcached*. Trilok Vyas, Yujie Liu and Michael Spear (Lehigh University).
- *From Locks to Transactional Memory: Lessons Learned from Porting a Real-world Application*. Alexandre Skyrme and Noemi Rodriguez. (Pontifical Catholic University of Rio de Janeiro).

12.00 pm — 1.20 pm: Lunch

1.20 pm — 3.00 pm: Session 3 - Hardware and Scheduling
Chair: Michael Spear

- *Reduced Hardware Transactions: a New Approach to Hybrid Transactional Memory*. Alex Matveev (Tel-Aviv University) and Nir Shavit (MIT and Tel-Aviv University).
- *Enhanced Concurrency Control with Transactional NACKs*. Woongki Baek, Richard Yoo and Christos Kozyrakis. (Stanford University).
- *EMBEDDED-SPEC: A Light-Weight and Transparent Hardware Implementation of Lock Elision for Embedded Multicore Systems*. Giuseppe Capodanno, Dimitra Papagiannopoulou, R. Iris Bahar (Brown Univestiy), Tali Moreshet (Swarthmore College) and Maurice Herlihy (Brown University).
- *RELSTM: A Proactive Transactional Memory Scheduler*. David Sainz and Hagit Attiya. (Technion)

3.00 pm — 3.30 pm: Break

3.30 pm — 4.25 pm: Session 4 - Brief Announcements

Chair: Tatiana Shpeisman

- *Leveraging Transactional Memory for Energy-efficient Computing below Safe Operation Margins*. Adrian Cristal, Osman Unsal, Gulay Yalcin, (Barcelona Computing Center, Spain), Christof Fetzer, Jons-Tobias Wamhoff, (Dresden University of Technology), Pascal Felber, Derin Harmanci and Anita Sobe (University of Neuchatel, Switzerland).
- *Generic Programming Needs Transactional Memory*. Justin E. Gottschlich (Intel Labs) and Hans-J. Boehm (HP Labs).
- *DREAM: Dresden Streaming Transactional Memory Benchmark*. Jons-Tobias Wamhoff and Stefan Weigert (Technische Universitat Dresden).
- *ByteSTM: Virtual Machine-level Java Software Transactional Memory*. Mohamed Mohamedin and Binoy Ravindran (Virginia Tech).

4.25 pm — 5.25 pm: Town Hall Meeting

- *Language-Level Standards for TM*.

WODET 2013

Sunday 17th March 2013

8.50 am–9.00 am: Welcome

9.00 am–10.00 am: Invited Talk

- *The Imperative of Disciplined Parallelism: A Hardware Architect's Perspective*. Sarita Adve (University of Illinois at Urbana-Champaign).

10.00 am–10.30 am: Coffee Break

10.30 am–11.20 am: Session 1 - Type Systems and Verification

- *Balloon Types for Safe Parallelisation over Arbitrary Object Graphs*. David J. Pearce, Lindsay Groves, and Alex Potanin (Victoria University of Wellington).
- *High-Level Abstractions for Safe Parallelism*. Robert L. Bocchino Jr. (Carnegie Mellon University), Hannes Mehnert (IT University of Copenhagen), and Jonathan Aldrich (Carnegie Mellon University).

11.20 am–12.10 pm: Session 2 - Task Parallelism

- *Finish Accumulators: A Deterministic Reduction Construct for Dynamic Task Parallelism*. Jun Shirako, Vincent Cave, Jisheng Zhao, and Vivek Sarkar (Rice University).
- *TARDIS: Task-level Access Race Detection by Intersecting Sets*. Weixing Ji (Beijing Institute of Technology) and Li Lu and Michael L. Scott (University of Rochester).

12.10 pm — 1.30 pm: Lunch

1.30 pm — 2.30 pm: Invited Talk

- *Internally Deterministic Parallel Algorithms*. Guy Blelloch (Carnegie Mellon University).

2.35 pm — 3.00 pm: Session 3 - Execution-Level Determinism

- *Deterministic Scaling*. Gabriel Southern, Madan Das, and Jose Renau (UC Santa Cruz).

3.00 pm — 3.30 pm: Coffee Break

3.30 pm — 4.20 pm: Session 3 (continued)

- *Increasing Concurrency in Deterministic Runtimes with Conversion*. Timothy Merrifield and Jakob Eriksson (University of Illinois at Chicago).
- *Reducing Logging Overhead for Deterministic Execution*. Madan Das, Gabriel Southern, and Jose Renau (UC Santa Cruz).

4.20 pm — 5.10 pm: Session 4 - Controlling Nondeterminism

- *Determinism and Reproducibility in Large-Scale HPC Systems*. Wei-Fan Chiang, Ganesh Gopalakrishnan, and Zvonimir Rakamaric (University of Utah) and Dong H. Ahn and Gregory L. Lee (Lawrence Livermore National Laboratory).
- *Input-Covering Schedules for Multithreaded Programs*. Tom Bergan, Luis Ceze, and Dan Grossman (University of Washington).

ASPLOS 2013

Monday 18th March 2013

8.20 am — 8.30 am: Welcome

8.30 am — 10.00 am: Session 1 - Determinism and Data Races

Chair: Kim Hazelwood

- *GPUDet: A Deterministic GPU Architecture*. Hadi Jooybar (University of British Columbia), Wilson W. L. Fung (University of British Columbia), Mike O'Connor (AMD Research), Joseph Devietti (University of Washington), Tor M. Aamodt (University of British Columbia).
- *DeNovoND: Efficient Hardware Support for Disciplined Non-Determinism*. Hyojin Sung, Rakesh Komuravelli, Sarita Adve (University of Illinois).
- *Parallelizing Data Race Detection*. Benjamin Wester (University of Michigan; Facebook), David Devecsery (University of Michigan), Peter Chen (University of Michigan), Jason Flinn (University of Michigan), Satish Narayanasamy (University of Michigan).
- *Cooperative Empirical Failure Avoidance for Multithreaded Program*. Brandon Lucia, Luis Ceze (University of Washington).

10.00 am — 10.30 am: Coffee Break

10.30 am — 12.00 pm: Session 2 - Datacenters

Chair: David Wentzlaff

- *Parasol and GreenSwitch: Managing Datacenters Powered by Renewable Energy*. Íñigo Goiri (Rutgers University), William Katsak (Rutgers University), Kien Le (Rutgers University), Thu D. Nguyen (Rutgers University), Ricardo Bianchini (Rutgers University).
- *Power Containers: An OS Facility for Fine-Grained Power and Energy Management on Multicore Servers*. Kai Shen (University of Rochester), Arrvindh Shriraman (Simon Fraser University), Sandhya Dwarkadas (University of Rochester), Xiao Zhang (Google), Zhuan Chen (University of Rochester).
- *Paragon: QoS-Aware Scheduling for Heterogeneous Datacenters*. Christina Delimitrou, Christos Kozyrakis (Stanford University).
- *ReQoS: Reactive Static/Dynamic Compilation for QoS in Warehouse Scale Computers*. Lingjia Tang (University of California – San Diego), Jason Mars (University of California – San Diego), Wei Wang (University of Virginia), Tanima Dey (University of Virginia), Mary Lou Soffa (University of Virginia).

12.00 pm — 1.30 pm: Lunch

1.30 pm — 3.00 pm: Session 3 - Debugging

Chair: Tim Harris

- *Production-Run Software Failure Diagnosis via Hardware Performance Counters*. Joy Arulraj, Po-Chun Chang, Guoliang Jin, Shan Lu (University of Wisconsin).
- *ConAir: Featherweight Concurrency Bug Recovery Via Single-Threaded Idempotent Execution*. Wei Zhang, Marc Kruijf, Ang

Li, Shan Lu, Karthikeyan Sankaralingam (University of Wisconsin).

- *Transparent Mutable Replay for Multicore Debugging and Patch Validation*. Nicolas Viennot, Sid Nair, Jason Nieh (Columbia University).
- *Using Likely Invariants for Automated Software Fault Localization*. Swarup Sahoo, John Criswell, Chase Geigle, Vikram Adve (University of Illinois at Urbana-Champaign).

3.00 pm — 3.30 pm: Coffee Break

3.30 pm — 5.00 pm: Provocative Ideas Session

Chair: Milind Kulkarni

- *Redefining the term re-configurable chips*. Nachiappan Chidambaram, Mahmut Kandemir and Chita Das (Penn State).
- *It's time for new programming models for new hardware*. Hajime Fujita, Robert Schreiber and Andrew Chien (Argonne National Labs, HP Labs, and University of Chicago).
- *rSmart*. Niranjan Soundararajan (Intel).
- Invited talk: *Probabilistic computing: stochastic software and hardware that makes probabilistic modeling and machine learning simpler, more flexible and faster*. Vikash Mansinghka (Massachusetts Institute of Technology).

5.00 pm — 5.15 pm: Program Chair's Report and the ASPLOS 2013 Best Paper Award

Tuesday 19th March 2013

8.30 am — 10.00 am: Keynote by Eric Paulos, UC Berkeley

Chair: Vivek Sarkar

- *The Rise of the Expert Amateur: DIY Culture and the Evolution of Computer Science*.

10.00 am — 10.30 am: Coffee Break

10.30 am — 12.00 pm: Session 1 - Architecture I

Chair: Kai Shen

- *Computational Sprinting on a Hardware/Software Testbed*. Arun Raghavan (University of Pennsylvania), Laurel Emurian (University of Pennsylvania), Lei Shao (University of Michigan), Marios Papaefthymiou (University of Michigan), Kevin Pipe (University of Michigan), Thomas Wenisch (University of Michigan), Milo Martin (University of Pennsylvania).
- *DeAliaser: Alias Speculation Using Atomic Region Support*. Wonsun Ahn (University of Illinois at Urbana Champaign), Yuelu Duan (University of Illinois at Urbana Champaign), Josep Torrellas (University of Illinois at Urbana Champaign).
- *Regularities Considered Harmful: Forcing Randomness to Memory Accesses to Reduce Row Buffer Conflicts for Multi-Core Multi-Bank Systems*. Heekwon Park (University of Pittsburgh), Seungjae Baek (University of Pittsburgh), Jongmoo Choi (Dankook University), Donghee Lee (University of Seoul), Sam H. Noh (Hongik University).
- *Cyrus: Unintrusive Application-Level Record-Replay for Replay Parallelism*. Nima Honarmand (UIUC), Nathan Dautenhahn (UIUC),

Gilles Pokam (Intel), Cristiano Pereira (Intel), Samuel King (UIUC), Josep Torrellas (UIUC).

12.00 pm — 1.30 pm: Lunch

1.30 pm — 3.00 pm: Session 2 - Performance Analysis

Chair: Karin Strauss

Note: In parallel with the "Security" session

- *Why You Should Care About Quantile Regression*. Augusto Oliveira (University of Waterloo), Sebastian Fischmeister (University of Waterloo), Amer Diwan (Google Inc.), Matthias Hauswirth (University of Lugano), Peter Sweeney (IBM Research).
- *Stabilizer: Statistically Sound Performance Evaluation*. Charlie Curtsinger (University of Massachusetts), Emery Berger (University of Massachusetts Amherst).
- *A study of the Scalability of Stop-the-World Garbage Collectors on Multicore*. Lokesh Gidra, Gaël Thomas, Julien Sopena, Marc Shapiro (Regal-LIP6/INRIA/UPMC).
- *Discerning the Dominant Out-of-Order Performance Advantage: is it Dynamism or Speculation?* Daniel McFarlin (Carnegie Mellon University), Charles Tucker (University of Illinois Urbana Champaign), Craig Zilles (University of Illinois Urbana Champaign).

1.30 pm — 3.00 pm: Session 2 - Security

Chair: Rusty Sears

Note: In parallel with the "Performance Analysis" session

- *Iago Attacks: Why The System Call API Is a Bad Untrusted RPC Interface*. Stephen Checkoway (Johns Hopkins University), Hovav Shacham (UC San Diego).

- *InkTag: Secure Applications on an Untrusted Operating System*. Owen Hofmann, Alan Dunn, Sangman Kim, Michael Lee, Emmett Witchel (The University of Texas at Austin).
- *Safe and Automatic Hot Updates for Operating Systems*. Cristiano Giuffrida, Anton Kuijsten, Andrew S. Tanenbaum (Vrije Universiteit Amsterdam).
- *Verifying Security Invariants in ExpressOS*. Haohui Mai, Edgar Pek, Hui Xue, Samuel T. King, Parthasarathy Madhusudan (University of Illinois at Urbana-Champaign).

3.00 pm — 3.30 pm: Coffee Break

3.30 pm — 5.00 pm: Session 3 - Compilation I

Chair: Milo Martin

Note: In parallel with the "Scheduling and Virtualization" session

- *Stochastic Superoptimization*. Eric Schkufza, Rahul Sharma, Alex Aiken (Stanford University).
- *Automated Repair of Binary and Assembly Programs for Cooperating Embedded Devices*. Eric Schulte (UNM), Jonathan Dilorenzo (UVA), Stephanie Forrest (University of New Mexico), Westley Weimer (University of Virginia).
- *Verifying Systems Rules Using Rule-Directed Symbolic Execution*. Heming Cui, Gang Hu, Jingyue Wu, Junfeng Yang (Columbia University).
- *HOT: a Higher Order Theory of Locality*. Xiaoya Xiang, Hao Luo, Bin Bao, Chen Ding (University of Rochester).

3.30 pm — 5.00 pm: Session 3 - Scheduling and Virtualization

Chair: Lin Zhong

Note: In parallel with the "Compilation I" session

- *To Hardware Prefetch or Not to Prefetch? A Virtualized Environment Study & Core Binding Approach*. Hui Kang, Jennifer Wong (Stony Brook University).
- *Demand-Based Coordinated Scheduling for SMP VMs*. Hwanju Kim (KAIST), Sangwook Kim (SungKyunKwan University), Jinkyu Jeong (KAIST), Joonwon Lee (SungKyunKwan University), Seungryoul Maeng (KAIST).
- *Traffic Management: A Holistic Approach to Memory Placement on NUMA Systems*. Mohammad Dashti (Simon Fraser University), Alexandra Fedorova (Simon Fraser University), Justin Funston (Simon Fraser University), Fabien Gaud (Simon Fraser University), Renaud Lachaize (UJF), Baptiste Lepers (INRIA), Vivien Quema (CNRS), Mark Roth (Simon Fraser University).
- *OWL: Cooperative Thread Array Aware Scheduling Techniques for Improving GPGPU performance*. Adwait Jog (PSU), Onur Kayiran (PSU), Nachiappan Chidambaram Nachiappan (PSU), Asit K. Mishra (Intel Labs), Mahmut T. Kandemir (The Pennsylvania State University), Onur Mutlu (Carnegie Mellon University), Ravishankar Iyer (Intel Labs), Chita R. Das (The Pennsylvania State University).

5.30 pm — 9.30 pm: Conference Banquet

at the Houston Museum of Natural Science
(bus transportation will be provided from hotel)

Wednesday 20th March 2013

8.30 am — 10.00 am: Session 1 - Compilation II

Chair: Adam Welc

- *Improving GPGPU Concurrency with Elastic Kernels*. Sreepathi Pai, M J Thazhuthaveetil, R Govindarajan (Indian Institute of Science).
- *Practical Automatic Loop Specialization*. Taewook Oh, Hanjun Kim, Nick P. Johnson (Princeton University), Jae W. Lee (SungKyunKwan University), David I. August (Princeton University).
- *Portable Performance on Heterogeneous Architectures*. Phitchaya Phothilimthana, Jason Ansel, Jonathan Ragan-Kelley, Saman Amarasinghe (MIT).
- *Efficient Virtualization on Embedded Power Architecture Platforms*. Aashish Mittal (Indian Institute of Technology Delhi), Dushyant Bansal (Indian Institute of Technology Delhi), Sorav Bansal (Indian Institute of Technology Delhi), Varun Sethi (Freescale Semiconductor).

10.00 am — 10.30 am: Coffee Break

10.30 am — 12.00 pm: Panel: *Research Directions for 21st Century Computer Systems*

Chair: Mark Hill

12.00 pm — 1.30 pm: Lunch

1.30 pm — 3.00 pm: Session 2 - OS

Chair: Gernot Heiser

- *Unikernels: Library Operating Systems for the Cloud*. Anil Madhavapeddy (University of Cambridge), Richard

Mortier (University of Nottingham), Charalampos Rotsos (University of Cambridge), David Scott (Citrix Systems R&D), Balraj Singh (University of Cambridge), Thomas Gazagnaire (OcamlPro), Steven Smith (University of Cambridge), Steven Hand (University of Cambridge), Jon Crowcroft (University of Cambridge).

- *Fine-Grained Fault Tolerance using Device Checkpoints*. Asim Kadav, Matthew J. Renzelmann, Michael M. Swift (University of Wisconsin-Madison).
- *GPUfs: Integrating a File System with GPUs*. Mark Silberstein (UT Austin), Bryan Ford (Yale University), Idit Keidar (Technion), Emmett Witchel (UT Austin).
- *DDOS: Taming Nondeterminism in Distributed Systems*. Nicholas Hunt, Tom Bergan, Luis Ceze, Steven Gribble (University of Washington).

3.00 pm — 3.30 pm: Coffee Break

3.30 pm — 5.00 pm: Session 3 - Architecture II

Chair: Emmett Witchel

- *TSO_Atomicity: Efficient Hardware Primitive for TSO-Preserving Region Optimizations*. Cheng Wang, Youfeng Wu (Intel Labs).
- *Wait-n-GoTM: Improving HTM Performance by Serializing Cyclic Dependencies*. Syed Ali Raza Jafri, Gwendolyn Voskuilen, T. N. Vijaykumar (Purdue University).
- *Volition: Scalable and Precise Sequential Consistency Violation Detection*. Xuehai Qian (University of Illinois), Benjamin Sahelices (University of Valladolid), Josep Torrellas (University of Illinois), Depei Qian (Beihang University).

- *Hardware Support for Fine-Grained Event-Driven Computation in Anton 2*. J.P. Grossman (D. E. Shaw Research), Jeffrey S. Kuskin (D. E. Shaw Research), Joseph A. Bank (D. E. Shaw Research), Michael Theobald (D. E. Shaw Research), Ron O. Dror (D. E. Shaw Research), Douglas J. Ierardi (D. E. Shaw Research), Richard H. Larson (D. E. Shaw Research), U. Ben Schafer (D. E. Shaw Research), Brian Towles (D. E. Shaw Research), Cliff Young (D. E. Shaw Research), David E. Shaw (D. E. Shaw Research and Columbia University).

5.00 pm — 5.15 pm: Closing Remarks

ASPLOS Banquet

Tuesday 19th March 2013

5.30: Buses leave hotel for HMNS

6.00 pm — 7.00 pm: Appetizers

7.00 pm — 9.00 pm: Dinner

Location:

Houston Museum of Natural Science

5555 Hermann Park Dr.

Houston, Texas 77030.

Tel. +1 (713) 639-4629

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