

FINAL PROGRAM

CASES 2008

MONDAY, OCTOBER 20 - WEDNESDAY, OCTOBER 22

MONDAY, OCTOBER 20

8:30 - 9:00 OPENING

CASES, EMSOFT, CODES-ISSS

9:00 - 11:00 TURING AWARD LECTURE

CASES, EMSOFT, CODES-ISSS

11:30 - 12:30 CASES SESSION 1: RESILIENCY

Chair: Hsien-Hsin Lee

Stagenetslice: A Reconfigurable Microarchitecture Building Block for Resilient CMP Systems
Shantanu Gupta, Shuguang Feng, Amin Ansari, Jason Blome, and Scott Mahlke

A Light-Weight Cache-Based Fault Detection and Checkpointing Scheme for MPSoCs Enabling
Relaxed Execution Synchronization
Chengmo Yang and Alex Orailoglu

1:30 - 2:30 CASES KEYNOTE

ZebraNet and Beyond: Applications and Systems Support for Mobile, Dynamic Networks

*** Margaret Martonosi ***

Princeton University

2:30 - 3:30 CASES SESSION 2: COMPILER HARDWARE INTERACTION

Chair: Al Davis

Non-Intrusive Dynamic Application Profiler for Detailed Loop Execution Characterization
Ajay Nair and Roman Lysecky

Exploring and Predicting the Architecture/Optimizing Compiler Co-Design Space
Christophe Dubach, Timothy Jones, and Michael O'Boyle

4:00 - 6:00 CASES SESSION 3: RECONFIGURABLE COMPUTING

Chair: X. Sharon Hu

Optimus: Efficient Realization of Streaming Applications on FPGAs
Amir Hormati, Manjunath Kudlur, David Bacon, Scott Mahlke, and Rodric Rabbah

Compiling Custom Instructions onto Expression-Grained Reconfigurable Architectures
Paolo Bonzini, Giovanni Ansaloni, and Laura Pozzi

VESPA: Portable, Scalable, and Flexible FPGA-Based Vector Processors
Peter Yiannacouras, J. Gregory Steffan, and Jonathan Rose

Dynamic Coprocessor Management for FPGA-Enhanced Compute Platforms
Chen Huang and Frank Vahid

6:00 - 7:00 PANEL

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TUESDAY, OCTOBER 21

9:00 - 10:00 CASES KEYNOTE

CASES, EMSOFT, CODES-ISSS

*** **Bill Athas** *** *Power on Demand for Mobile Computing Devices*
Apple

10:30 - 12:00 CASES SESSION 4: MULTIPROCESSORS

Chair: Nate Clark

Efficiency and Scalability of Barrier Synchronization on NoC Based Many-Core Architectures
Oreste Villa, Gianluca Palermo, and Cristina Silvano

Decoupled Root Scanning in Multi-Processor Systems
Wolfgang Puffitsch

SoC-C: Efficient Programming Abstractions for Heterogeneous Multicore Systems on Chip
Alastair Reid, Yuan Lin, Krisztian Flautner, and Edmund Grimley-Evans

1:30 - 3:30 CASES SESSION 5: CACHING AND ITS IMPACT

Chair: Ann Gordon-Ross

Reducing Pressure in Bounded DBT Code Caches
Jose Baiocchi, Bruce Childers, Jack Davidson, and Jason Hiser

Efficient Code Caching to Improve Performance and Energy Consumption for Java Applications
Yu Sun and Wei Zhang

Cache-Aware Cross-Profiling for Java Processors
Walter Binder, Alex Villazon, Martin Schoeberl, and Philippe Moret

Predictable Programming on a Precision Timed Architecture
Ben Lickly, Isaac Liu, Sungjun Kim, Hiren D. Patel, Stephen A. Edwards, and Edward A. Lee

4:00 - 6:00 CASES SESSION 6: COMPILERS

Chair: Fabrice Rastello

Advanced Conservative and Optimistic Register Coalescing
Florent Bouchez, Alain Darté and Fabrice Rastello

Control Flow Optimization in Loops Using Interval Analysis
Mohammad Ali Ghodrat, Tony Givargis and Alex Nicolau

Efficient Vectorization of SIMD Programs with Non-Aligned and Irregular Data Access Hardware
Hoseok Chang and Wonyong Sung

Comprehensive Isomorphic Subtree Enumeration
Partha Biswas and Girish Venkataramani

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WEDNESDAY, OCTOBER 22

9:00 - 10:00 CODES-ISSS KEYNOTE

CASES, EMSOFT, CODES-ISSS

10:30 - 12:00 CASES SESSION 7: POWER, RECONFIGURABILITY & SIMULATION

Chair: Leyla Nazhandali

Highly Energy and Performance Efficient Embedded DSP through "Somewhat" Erroneous Arithmetic

Kirthi Krishna, Lingamneni Avinash, Lakshmi Chakrapani and Krishna Palem

Multiple Sleep Mode Leakage Control for Cache Peripheral Circuits in Embedded Processors

Houman Homayoun and Alex Veidenbaum

Design Space Exploration for Field Programmable Counter Arrays

Seyed Hossein Attarzadeh Niaki, Alessandro Cevrero, Chrysostomos Nicopoulos, Frank Gurkaynak, Philip Brisk, Paolo lenne, and Yusuf Leblebici

Multi-Granularity Sampling for Simulating Concurrent Heterogeneous Applications

Melhem Tawk, Khaled Ibrahim and Smail Niar

1:30 - 3:30 CASES SESSION 8: ENERGY, POWER, AND SECURITY

Chair: Aviral Srivastava

Active Control and Digital Rights Management of Integrated Circuit IP Cores

Yousra Alkabani and Farinaz Koushanfar

A Low-Power Parallel Design of Discrete Wavelet Transform using Subthreshold Voltage Technology

Michael Henry, Leyla Nazhandali and Syed Haider

Optimal Power Management of MEMS-Based Storage Devices for Mobile Systems

Mohammed G. Khatib and Pieter H. Hartel

Execution Context Optimization for Disk Energy

Jerry Hom and Ulrich Kremer

4:00 - 5:30 PANEL

CASES, EMSOFT, CODES-ISSS

5:30 - 6:00 CLOSING REMARKS

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