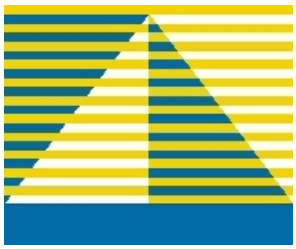

28th Annual International Symposium on Computer Architecture

Göteborg, Sweden June 30-July 4, 2001

Advance Program

WORKSHOPS (June 30 – July 1)

W1: Workshop on Memory Performance Issues Saturday and Sunday: 9am-5pm.

W2: Workshop on Complexity-Effective Design (WCED'01). Saturday 9am-5pm.

W3: EASY: Evaluating and Architecting Systems for Dependability. Sunday 9am-5pm.

Tutorials (June 30 – July 1)

T1: VIA and InfiniBand Communication Architecture. Saturday 9am–12:30pm.

T2: Virtual Machines: Architectures, Implementations, and Applications. Saturday 1:30pm-5pm.

T3: Power-Efficient Design: Modeling and Optimizations. Sunday 9am– 5pm.

T4: Fault-tolerant CORBA. Sunday 9am-12:30pm

T5: System Survivability Analysis and Simulation. Sunday 1:30pm– 5:00pm

ISCA TECHNICAL PROGRAM

Monday, July 2, 2001

PLENARY SESSION

Opening Remarks
Keynote Speech: Greg Papadopoulos, CTO, Sun Microsystems Inc., U.S.A.

SESSION 1: MULTITHREADING AND SPECULATION

- Execution-based Prediction Using Speculative Slices. *Zilles, Sohi; U. Wisconsin.*
- Speculative Precomputation: Long-range Prefetching of Delinquent Loads. *Collins, Wang, Tullsen, Christopher, Lee, Lavery; UCSD, Intel, U. Illinois.*
- Dynamically Allocating Processor Resources Between Nearby and Distant ILP. *Balasubramonian, Dwarkadas, Albonesi; U. Rochester.*

SESSION 2: MEMORY SYSTEM ISSUES

- Tolerating Memory Latency through Software-Controlled Pre-Execution in Simultaneous Multithreading Processors. *Luk; Compaq*.
- Data Prefetching by Dependence Graph Precomputation. *Annavaram, Patel, Davidson; U. Michigan*.
- Concurrency, Latency, or System Overhead: Which Has the Largest Impact on Uniprocessor DRAM-System Performance? *Cuppu, Jacob; U. Maryland*.

SESSION 3: PROCESSOR ARCHITECTURE

- Focusing Processor Policies via Critical-Path Prediction. *Fields, Rubin, Bodik; U. Wisconsin*
- Automated Design of Finite State Machine Predictors for Customized Processors. *Sherwood, Calder; UCSD*.
- Better Exploration of Region-Level Value Locality with Integrated Computation Reuse and Value Prediction. *Wu, Chen, Fang. Intel*.

ACM SIGARCH & IEEE CS TCCA BUSINESS MEETING; EVENING RECEPTION AT CITY HALL

Tuesday, July 3, 2001

SESSION 4: COMMUNICATION SUPPORT

- CryptoManiac: A Fast Flexible Architecture for Secure Communication. *Wu, Weaver, Austin; U. Michigan.*
- QoS Provisioning in Clusters: An Investigation of Router and NIC Design. *Yum, Kim, Das; Penn. State. U.*

SESSION 5: CACHE MANAGEMENT

- Locality vs. Criticality. Srinivasan, Ju, Lebeck, Wilkerson; Duke U., Intel.
- Dead-Block Prediction & Dead-Block Correlating Prefetchers. *Lai, Fide, Falsafi; Purdue, Sun Microsystems, CMU.*
- Code Layout Optimizations for Transaction Processing Workloads. *Ramirez, Barroso, Gharachorloo, Cohn, Larriba-Pey, Lowney, Valero; UPC, Compaq.*

AWARD LUNCHEON

SESSION 6A: ARCHITECTURAL IMPACT OF EMERGING TECHNOLOGIES

- Exploring and Exploiting Wire-Level Pipelining in Emerging Technologies. *Niemier, Kogge; Notre Dame*.
- NanoFabrics: Spatial Computing Using Molecular Electronics. *Goldstein, Bidiu; CMU.*

SESSION 6B: SHARED-MEMORY MULTIPROCESSORS

- A Simple Method for Extracting Models from Protocol Code. *Lie, Chou, Engler, Dill; Stanford U.*
- Removing Architectural Bottlenecks to the Scalability of Speculative Parallelization. *Prvulovic, Garzaran, Torrellas; UIUC, U. Zaragoza.*

EXCURSION & BANQUET

Wednesday, July 4, 2001

SESSION 7: ENERGY-EFFECTIVE DESIGNS

- Power and Energy Reduction Via Pipeline Balancing. *Bahar, Manne; Brown, Compaq*.
- Energy-Effective Issue Logic. *Folegnani, Gonzalez; UPC.*
- Cache Decay: Exploiting Generational Behavior to Reduce Leakage Power. *Kaxiras, Hu, Martonosi. Agere Sys., Princeton.*

SESSION 8: PERFORMANCE TOOLS AND EVALUATIONS

- Variability in the Execution of Multimedia Applications and Implications for General-Purpose Architectures. *Hughes, Kaul, Adve, Jain, Park, Srinivasan; UIUC.*
- Measuring Experimental Error in Microprocessor Simulation. *Desikan, Burger, Keckler; U. Texas.*
- Rapid Profiling via Stratified Sampling. *Sastry, Bodik, Smith; U. Wisconsin.*