

Hot Chips 9

A Symposium of High-Performance Chips

August 24-26, 1997

Kresge Auditorium
Stanford University
Palo Alto, California

Sunday, August 24, 1997

Morning Tutorial

Sorting out the New DRAMs

Steven Przybylski, Verdande Group, Inc.

Afternoon Tutorial

Architectural and Design Implications of Mediaprocessing

Pradeep Dubey, IBM T. J. Watson Research Center

Monday, August 25, 1997

Welcome and Opening Remarks

S. Diane Smith (General Chair)

Allen J. Baum and Alan Jay Smith (Program Co-Chairs)

Session 1 Research Machines

John Wawrzynek, University of California, Berkeley (Session Chair)

The MIT Multi-ALU Processor

Steve Keckler, MIT Artificial Intelligence Laboratory

(.pdf)

MATRIX: A Reconfigurable Computing Device with Configurable Instruction Distribution

Eathan Mirsky, MIT Artificial Intelligence Laboratory

(.pdf)

TITAC-2: A 32-bit Scalable-Delay-Insensitive Microprocessor

Takashi Nanya, University of Tokyo

(.pdf)

Session 2 Specialized Chips

Mitsuo Saito, Toshiba (Session Chair)

Intel 82440LX PCI Chipset (.pdf)

Richard Malinowski, Intel Corporation

1/4 Inch CMOS Active Pixel Sensor with Smart On-Chip Functions and Full Digital Interface (.pdf)

E. R. Fossum, Photobit

The VelociTI™ Architecture of the TMS320C6x (.pdf)

Loc Truong, Texas Instruments

Session 3 Keynote Speaker

Robert Garner, Sun Microsystems, Inc. (Session Chair)

Gigascale Integration: Is the Sky the Limit?

James Meindl

Session 4 Virtual Machines

Monica Lam, Stanford University (Session Chair)

The Design of the Inferno Machine (.pdf)

Phil Winterbottom, Rob Pike, Bell Labs

Digital FX!32: A Utility for Fast Transparent Execution of Win32 x86 Applications on Alpha NT (.pdf)

Norm Rubin, Digital Equipment Corporation

Java on Steroids: Sun's High-Performance Java Implementation (.pdf)

Urs Heitzle, Javasoft and UCSB

Session 5 Performance Analysis

Forest Baskett, Silicon Graphics, Inc. (Session Chair)

Effectiveness of the MAX-2 Multimedia Extensions for PA-RISC 2.0 Processors (.pdf)

Ruby Lee, Hewlett-Packard Company

Continuous Profiling (It's 10:43; Do you know Where Your Cycles Are?) (.pdf)

Jennifer Anderson, Digital Equipment Corporation

Session 6 Panel Session

John Warton, Applications Research (Moderator)

*If **I** Were Defining 'Merced'*

Monday, August 25, 1997

Session 7 Embedded Processors

Allen J. Baum, Digital Equipment Corporation (Session Chair)

- SH4 RISC Microprocessor for Multimedia* (.pdf)
Fumio Arakawa, Hitachi Central Research Labs
- Embedded Multimedia Superscalar RISC Processor with Rambus Interface* (.pdf)
Tomohisa Arai, NEC Corporation
- The StrongARM SA-1100 - A Portable Communications Microprocessor* (.pdf)
Jeff Slaton, Digital Equipment Corporation

Session 8 Media/3D/Graphics Processors (Part 1)

Paul Kalapathy, Chromatic (Session Chair)

- Overview of the Laguna II Rambus Multimedia Accelerator* (.pdf)
Mike Buchanan, Cirrus Logic
- A Programmable Video Coprocessor* (.pdf)
Dominique Barthel, France Telecom
- R3D/100 - 3D High Performance Chipset* (.pdf)
Jeff Potter, Real3D
- Efficient High Performance 3D Pipeline Implementation on a Media Processor* (.pdf)
Jim Battle, Chromatic

Session 9 Keynote Speaker

Alan Jay Smith, University of California, Berkeley (Session Chair)

- HDTV and Other Advances in Communications and Broadcasting*
Reed Hundt, Chairman, Federal Communications Commission

Session 10 Media/3D/Graphics Processors (Part 2)

Keith Diefendorff, Apple Computer (Session Chair)

- Glint Gamma: A 3D Geometry and Lighting Processor for the PC* (.pdf)
Neil Trevett, 3Dlabs
- Reality Co-Processor* (.pdf)
Ken Hayes, Silicon Graphics, Inc.
- Pyramid3D Real-time Graphics Processor* (.pdf)
Kok Chin Chang, TriTech Microelectronics International, Inc.

Session 11 High-End CPUs

Dileep Bhandarkar, Intel Corporation (Session Chair)

A 250MHz 5W PowerPC Microprocessor with On-Chip L2 Cache Controller (.pdf)

Brad Burgess, Motorola

UltraSparc™ Iii - A Highly Integrated 300 MHz 64-bit SPARC V9 CPU (.pdf)

Kevin Normoyle, Sun Microelectronics

The PentiumAE II CPU: A High Performance Dynamic Execution Processor with MMX™ Technology (.pdf)

Nimish Modi, Intel Corporation