

Ho-Seop Kim

A Ph.D. dissertator in Dept. of Electrical and Computer Engineering
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Objective	To get permanent position in high performance microprocessor design and/or research. Expected graduate date: Aug 2004	
Ph.D. Research area	<ul style="list-style-type: none">Complexity-effective and interconnect-centric microarchitecture and instruction set designs; Instruction-Level Distributed Processing (ILDP)Hardware-software co-designed virtual architectures and dynamic binary translation systems	
Education	Ph.D. major in Electrical and Computer Engineering, University of Wisconsin-Madison (Advisor: James E. Smith) Ph.D. minor in Computer Science	Sep 1998 – Aug 2004 (expected)
	M.S. in Dept. of Electronics Engineering, Seoul National University	Feb 1993
	B.S. in Dept. of Electronics Engineering, Seoul National University	Feb 1991
Publications	“Hardware Support for Control Transfers in Code Caches,” The 36 th International Symposium on Microarchitecture (MICRO 2003), San Diego, CA	Dec 2003
	“Dynamic Binary Translation for Accumulator-Oriented Architectures,” The International Symposium on Code Generation and Optimization (CGO 2003), San Francisco, CA	Mar 2003
	“An Instruction Set and Microarchitecture for Instruction-Level Distributed Processing,” The 29 th International Symposium on Computer Architecture (ISCA 2002), Anchorage, AK	May 2002
	"Design of Content-Addressable Memory for Database Search Acceleration", Master's thesis, Seoul National University	Feb 1993
Work Experience	Research Assistant with Prof. James E. Smith: Hardware/software co-designed virtual machine for the ILDP paradigm Funded by SRC, NSF, Intel, and IBM	Jan 1999 – Now
	Student Intern: Sun Microsystems Performance simulation and gate-level design of out-of-order issue window alternatives	Jun – Aug 2000
	Teaching Assistant: Dept. of Electrical and Computer Engineering, University of Wisconsin-Madison: <ul style="list-style-type: none">ECE/ CS 552 Introduction to Computer Architecture	Aug – Dec 1999

Senior Research Engineer: Daewoo Telecom Jan 1995 – Jun 1998

- Develop TICOM-III MPUs (Intel Pentium-based processor boards for a backplane-style, shared-memory multiprocessor computer)
- Responsible for cache coherence enforcement and inter-processor communication mechanisms
- Work with software engineers for SCO UnixWare 2.1 (formerly called Unix System V Release 4.2 ES/MP) port

Research Engineer: Daewoo Telecom Jan 1993 – Dec 1994

- Develop a Motorola 68040-based TICOM-II MPU
- Manage CAE tools including Cadence and Synopsys

Research Assistant with Prof. Soo-Ik Chae, Seoul National University Mar 1991 – Dec 1992

- Design, implementation and characterization of an analog cell library for 1.2 μm CMOS digital technology

Skills

- Microarchitecture simulators: (1) a detailed, execution-driven, 12-stage out-of-order superscalar pipeline simulator, (2) an accumulator-oriented distributed back-end, out-of-order superscalar pipeline simulator for ILDP. Both simulators are built from scratch except for program loader and system call emulation parts.
- Program characteristics analysis tool: a custom-built dynamic dependence graph builder/analyzer
- Dynamic binary translator (DBT): a custom-built DBT system for translating Alpha instruction set to an accumulator-oriented, implementation-specific instruction set
- Programming languages: C, Java, C++
- Hardware Description Languages: Verilog, VHDL
- CAE tools: Cadence, Synopsys, Mentor, HSPICE, Altera, Xilinx
- Miscellaneous: SimpleScalar, Linux/Solaris/Windows system administration

Courses
(UW-Madison courses only)

- ECE 717: Linear Systems
- CS 703: Programming Languages and Compilers in Systems and Architecture
- ECE 541: Analog MOS IC design
- ECE 902: Special topic on Virtual Machine Architectures, Implementations and Applications
- CS 736: Advanced Operating Systems
- ECE 734: VLSI Systolic Array
- CS 757: Advanced Computer Architecture II
- CS 701: Construction of Compilers
- ECE 755: VLSI System Design
- ECE 752: Advanced Computer Architecture I
- CS 536: Introduction to Operating Systems
- CS 537: Introduction to Compilers
- ECE 552: Introduction to Computer Architecture
- ECE 548: Integrated Circuit Design
- CS 367: Data Structures

Reference Available upon request

Honors

Semiconductor Research Corp. Graduate Fellow	2000 – now
Winner of Intel design contest: ECE/CS 755 VLSI system design	Dec 1999
Graduate Fellowship from Daewoo Telecom	Mar 1991 – Dec 1992
Tuition Scholarship from Seoul National University	Mar 1988 – Dec 1990