Liu, Hao Jun

Contact Information

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Research Interests

Computer Architecture: Parallel Architecture, Hybrid Architecture, Architectural Simulation Methodology, Memory Coherence and Consistency Protocol
Programming Model and Compilers: Parallelizing Compilers, Parallel Programming Models, Behavioral Synthesis
Reconfigurable Computing: Reconfigurable Architecture, FPGA based Accelerator, Programming Models for FPGA

Education

University of Toronto, Toronto, ON, Canada

BASc. In Progress, Department of Electrical and Computer Engineering, Expected: June 2011

- Computer Specialization (Computer Hardware and Software)
- Final Project Topic: System Simulation for Android Operating System
- CGPA: 3.54
- Technical GPA: 3.82
- Relevent Courses:

Graduate Level Courses

ECE1387 CAD Tools for FPGA
ECE1718 Advance Computer Architecture
ECE1724 Programming Massively Parallel Processors
ECE1749 Interconnection Network
ECE1754 Compilation Techniques for Parallel Processors
ECE1755 Parallel Computer Architecture and Programming
ECE1762 Advance Algorithm and Data Structure
ECE1769 Behavioral Synthesis

Undergraduate Courses

CSC469 Operating System Implementation
ECE451 VLSI Design
ECE452 Computer Architecture
ECE454 Computer System Programming
ECE532 Digital System Design
ECE540 Compiler Optimization

Conference Publications

Saldana, M. Patel, A. **Liu, H. J.**, Chow, P. Using Partial Reconfiguration in an Embedded Message-Passing System In: *Proceedings of The 2010 International Conference on ReConFigurable Computing and FPGAs*, 2010.

Awards

Natural Sciences and Engineering Research Council of Canada

- Undergraduate Student Research Awards, 2010
- Undergraduate Student Research Awards, Offered but Declined, 2009

IEEE Canadian Foundation
- IEEE Canadian Foundation Scholarships, 2009

University of Toronto, Department of Electrical and Computer Engineering
- Faculty Undergraduate Summer Research Awards, 2008

Research Experience

Computer Group, Department of Electrical and Computer Engineering, University of Toronto, Toronto, ON, Canada

Research Student Supervised by Prof. Chow, P. **May 2010 to August 2010**

Project Topic: Applications for FPGA Partial Reconfiguration

Major Result: One Conference Publication Focused on using FPGA Partial Reconfiguration and Embedded MPI to Device new FPGA Programming Model

Research Student Supervised by Prof. Chow, P. **Sep 2009 to April 2010**

Project Topic: Molecule Dynamic Simulation on FPGA

Major Result: Designed a Basic Molecule Dynamic Simulation on FPGA using Behevioral Synthesis Tools for All Core Components

Research Student Supervised by Prof. Moshovos, A. **May 2010 to August 2010**

Project Topic: NAND Flash Storage System Implementation on FPGA

Major Result: A NAND Flash Controller Implemented on FPGA

Major Course Projects

Computer Group, Department of Electrical and Computer Engineering, University of Toronto, Toronto, ON, Canada

ECE1718 Instructor: Prof. Moshovos, A. **Sep 2009 to Dec 2009**

Project Topic: Evaluation of Current State of the Art Branch Predictors

Major Result: Project Report

ECE1724 Instructor: Prof. Moshovos, A. **Jan 2010 to May 2010**

Project Topic: GMP implementation on CUDA

Major Result: Project Report

Teaching Experience

University Preparatory Academy, Toronto, ON, Canada

High School Instructor **April 2007 to August 2007**

- SNC2D: Grade 10 Science
- MGA4U: Grade 12 Discrete Math.
- MDM4U: Grade 12 Math. of Data Management
- SCH3U: Grade 11 Chemistry
- SCH4U: Grade 12 Chemistry
- SPH4U: Grade 12 Physics

Professional Experience

Compiler Group, IBM, Markham, ON, Canada

Software Engineering in Build Team **May 2009 to April 2010**

Service and Volunteer Work

Chair, IEEE Student Branch, University of Toronto, 2010–Present

Chair Advisor, IEEE Student Branch, University of Toronto, 2009–2010

Vice Chair, IEEE Student Branch, University of Toronto, 2008–2009

Technical Skills

Extensive hardware and software experience in performance architecture and computing

Programming: C, C++, Perl, C Shell, Bash Shell, GNU make, SVN, Verilog HDL, VHDL

Embedded Systems: Xilinx's MicroBlaze Processor

Computer-Aided Design: Xlinx ISE, Altera Quartus II

Operating Systems: Linux, AIX, Solaris and IBM mainframe zOS

References

Available upon request