Qiuyun Wang Llull

Education

Duke University (Durham, NC)

Dec. 2016   Ph.D. in Computer Engineering, GPA: 3.8, adviser: Dr. Benjamin Lee

- Thesis: Design Hardware/Architecture-aware Datacenter Resource Management Policies

May. 2016   M.S. in Computer Science, GPA: 3.8

Université Paris Sud (Paris XI, France)

Jun. 2012   M.S. in Embedded Systems and Information Processing, rank: 3/43

Jun. 2012   Magistère in Information Systems and Technology; a selective national 3-year M.S. degree

Huazhong University of Science and Technology (Wuhan, China)

Jun. 2010   B.S. in Optoelectronic Information Engineering, GPA: 87/100

PhD Research Projects

1. **Application Colocation Framework on Shared Hardware with Cooperative Games**.
   Designed an end-to-end interference-aware task colocation framework for datacenter applications. Profiled Spark big data analytics on Intel server platforms to characterize application resource contention. Built a recommendation system to predict colocation preferences. Implemented and evaluated task scheduling mechanisms with the solution to a cooperative game.

2. **Coordinating NUMA Policies and Queueing Dynamics in Blade Servers**.
   Performed power modeling for DRAM and inter-processor communication technologies. Implemented delay-scheduling in a discrete-event driven simulator to model online task schedulers for a scale-up memory system. Built a model to coordinate hardware configurations (inter-processor communication technologies) and management software design (schedulers).

3. **Datacenter Workloads Characterization and Simulation Methodologies**.
   Prepared a web search engine for English Wikipedia with Apache Solr interface. Deployed graph analytical framework to process big datasets. Built work-flow from detailed cycle-accurate simulator to high-level event-driven simulator to model workloads' sensitivity to hardware architecture.

Work Experience

Jun. - Nov. 2014   **Oracle Labs**, *Belmont, CA.*

Research Intern

- Worked on performance analysis for the RAPID project, a hardware-software co-design system targeting large-scale data management and analysis.

Mar. - Aug. 2012   **Ecole Polytechnique Fédérale de Lausanne (EPFL)**, *Lausanne, Switzerland.*

Research Intern

- Worked with the HiperCore group on debugging and performance profiling of a Freescale P5020 development system (Power Architecture) for high-performance computing benchmarks.

Mar. - May. 2011   **Ecole Normale Supérieur Cachan**, *Paris, France.*

Research Assistant

- Developed the software-hardware interface for a robot, designed for autistic infants. Cross-compiled a Linux kernel for an embedded processor (OMAP). Developed display and network interfaces.

Honors and Awards

2013   Grace Hopper Celebration, Twitter Scholarship

2012   Graduate Fellowship, Duke University, Graduate School

2010   Outstanding Graduates, Huazhong University of Science & Technology

2007   Excellent Student Leader Scholarship, Huazhong University of Science & Technology

Publications and Presentations

1. **"Modeling Communication Costs in Blade Servers"**, *Qiuyun Wang, Benjamin Lee*.

   Presented at Proc. 8th Workshop on Power-Aware Computing and Systems (HotPower 2015), Monterey, CA; paper selected for Operating Systems Review, Dec. 2015

2. **"Tutorial: Datacenter Simulation Methodologies"**, *Tamara Lehman*, Qiuyun Wang*, Seyed Zahedi*, Benjamin Lee (*Co-First authors)*.

   Presented at International Symposium on Computer Architecture (ISCA 2015), Portland, OR and International Symposium on Microarchitecture (MICRO 2014), Cambridge, UK

3. **"MAP Estimation of the Input of an Oversampled Filter Bank from Noisy Subbands by Belief Propagation"**, *Qiuyun Wang, M. Abid, M. Kieffer and B. Pesquet-Popescu*.

   International Conference on Acoustics, Speech and Signal Processing (ICASSP 2012)

Skills

Programming, C/C++, JAVA, PYTHON, *bash*, R, MATLAB.

Tools and OS, Linux, Git, SVN, LATEX, Gem5, Marssx86, DRAMSim2, BigHouse.

Less Proficient, Spark Big Data Analytics, MapReduce, Apache Solr, GNU Linear Programming, SML, SIMD, OpenMP, MPI, OpenCL, VHDL, Mentor Graphics, Cadence, Oracd/Pspice, ModelSim.

Spoken languages, English, French and Chinese.

Programming Projects

2013 Spring   **Compiler Construction**.
Built a Tiger to MIPS compiler using the SML functional programming language. Implemented register allocation via graph coloring and register spilling (SML).

2012 Fall   **Operating System**.
Built a persistent file system with safe management mechanism that supports concurrent reads and writes by multiple users. Implemented the caching and an efficient eviction policy (JAVA).

Graduate Courses

Datacenter Architecture (Spark, MapReduce), Advanced Computer Architecture (C/C++), Parallel Computer Architecture, Compiler Construction (Teaching Assistant), Heterogeneous Computing (OpenCL, OpenMP, PThread), High Performance Computing, Operating Systems (Java, C), Networking and Quality of Service, Neural Networks and Statistic Learning, Network on Chip Design, Mathematical Finance, Computational Microeconomics (GNU Linear Programming)

Services

2014 - 2015   **President of ACM-W, Duke**, *Supporting, celebrating and advocating for Women in Computing*, Organized speaker events and mentor programs to connect women in computing.

2013 - 2014   **Treasury of ACM-W, Duke**, *Served as Secretary/Treasurer and web designer*.

Jul. 2007   **Supporting Education Program, China**, *Taught mathematics at primary schools and junior high schools in underprivileged mountain areas in China. Won the honor of "Excellent Social Practice Team", Huazhong University of Science & Technology, 2008.*