Qiuyun Wang

Curriculum Vitae

Research Interests

Energy efficient and high performance cloud computing framework.

Hardware resource management with economic theory.

Performance analysis and tasks scheduling for datacenters.

Effective datacenter simulation methodology.

Education

2012-present **Ph.D. student in Computer Engineering**, ***Duke University***, NC, US.
GPA: 3.74

- Adviser: Dr. Benjamin Lee
- Group: Computer Architecture

2009-2012 **M.S. in Embedded Systems and Information Processing**, ***Université Paris Sud (Paris XI)***, France, Rank 3/43.

Second Degree **Magistère** IST-EEA: A selective 3-year M.S. degree, joint program of Université Paris XI and Ecole Normale Supérieure (ENS) Cachan.

2006-2009 **B.E. in Optoelectronic Information Engineering**, ***Huazhong University of Science and Technology (HUST)***, China, GPA: 87/100.

2006 **China National College Entrance Exam**, *Top 1%*.

Experience

Aug. 2012 - Present **Research assistant at Duke University**, *NC*, US.
- Implemented task scheduling policies for datacenters.
- Modeled power modeling for DRAM and communication technologies.
- Built a heterogeneous datacenter resource allocation framework with Java using a machine learning approach.

Aug. 2013 - Present **Mentor for undergraduate research at Duke University**, *NC*, US.
- Deployed GraphLab applications interface to process big datasets. Explored task schedulers and data placement strategies.
- Prepared a web search engine for English Wikipedia with Apache Solr interface.
- Studied the design space of the interconnection topology for blade server systems with queueing theory and a queueing simulator.

Jun. 2014 - Nov. 2014 **Research Intern at Oracle Corporation**, *Belmont, CA*, US.
- Mentor: Evangelos Vlachos.
- Worked on performance analysis for RAPID project, a hardware-software co-design system targeting large-scale data management and analysis.

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Mar. 2012 - Aug. 2012 **Research Intern at Ecole Polytechnique Fédérale de Lausanne (EPFL)**, *Lausanne*, Switzerland.
- Advisers: Réné Beuchat, Paolo Ienne
- Worked on system performance analysis in the HiperCore group. Debugged and profiled the performance of a Freescale P5020 development system (Power Architecture with e5500 cores) for high-performance computing benchmarks.

Mar. 2011 - May. 2011 **Research Assistant at Ecole Normale Supérieur Cachan (ENS) Cachan**, *France*.
- Adviser: Gilbert Pradel
- Developed the software for a robot for autistic infants with an IGEPv2 card (OMAP processor). Cross-compiled a Linux kernel and developed display and network interfaces.

Jun. 2011 - Oct. 2011 **Laboratory of Signal and Systems (LSS), Supélec, CNRS**, *France*.
- Adviser: Michel Kieffer
- Implemented maximum a-posterior estimator via belief propagation. Reconstructed an overcomplete input signal performed by oversampled filter banks from noisy quantized transmission channel.

Oct. 2009 - Jan. 2010 **Ecole Supérieur D'Electricité (Supélec)**, *France*.
- Adviser: Sorin Olaru, Silviu-Iulian Niculescu
- Built a prediction model for synchronization control systems affected by delays and uncertainties. Developed optimization methods and simulated predictive control laws.

Honors and Awards

2013 Grace Hopper Celebration, GHC Twitter scholarship recipient

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

2007 Excellent Activist of Sports and Arts Scholarship, Huazhong University of Science & Technology

Publications

2012 **Q. Wang**, *M. Abid, M. Kieffer and B. Pesquet-Popescu*.
"MAP Estimation of the Input of an Oversampled Filter Bank from Noisy Subbands by Belief Propagation" *IEEE International Conference on Acoustics, Speech and Signal Processing (ICASSP 2012), Kyoto, Japan*

Presentations

2015 **Datacenter simulation methodologies**, *IEEE International Symposium on Performance Analysis of Systems and Software (**ISPASS 2015**)*, PA.

2014 **Datacenter simulation methodologies**, *International Symposium on Microarchitecture (**MICRO 2014**)*, Cambridge, UK.

2014 **NUMA-aware Task Placement Strategies for Datacenters**, *ECE Graduate Student Workshop, Duke University*, NC.

Teaching Assistant

2013 Fall **Computer Architecture (CPS250)**, *Duke University*.

2014 Spring **Compiler Construction (ECE553)**, *Duke University*.

Course Projects

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

2012 Fall **Operating System**, *Duke University*.
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.

Relevant Classes

- Datacenter Architecture
- Advanced Computer Architecture
- Parallel Computer Architecture
- Compiler Construction
- Heterogeneous Computing
- High Performance Computing
- Operating Systems
- Networking and QoS
- Neural Networks and Statistic Learning
- Computational Microeconomics
- Network on Chip Design
- Electronics Design for Embedded Systems

Technical Skills

- LINUX, BASH	- 6 years
- C/C++	- 4 years
- JAVA	- 4 years
- PYTHON	- 3 years
- MARSSx86, DRAMSim2, BigHouse	- 3 years
- Matlab, LaTeX, MS office	- 6 years
- GNU LP kit	- 2 years
- SIMD, OpenMP, MPI, OpenCL	- 1 year
- VHDL, Mentor Graphics, Cadence, Oracd/Pspice, ModelSim	- 1 year

Activities

2014 - 2015 **President of ACM-W**, *Duke University*.
Organize speaker events, regular meetings, social events to connect women in computing in Duke University.

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

2007 **Young volunteers association**, *China*.
Taught mathematics and physical education 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.

Languages

English	**Fluent**	*Studied in an American University for more than three years*
French	**Fluent**	*Studied in a French University for three years. TFI exam 670/900, 2012*
Chinese	**Native**	

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