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Christine S. Chan

Education

2014–2016 **Ph.D.**, *Computer Engineering*, University of California, San Diego.

2011–2013 **M.S.**, *Computer Engineering*, University of California, San Diego, *GPA: 3.63*.

2007–2011 **B.S.**, *Computer Engineering*, University of Illinois, Urbana Champaign, *GPA: 3.56 -Honors*.

Experience

2011–present **Graduate Researcher**, *University of California, San Diego*.
System Energy Efficiency Lab under Tajana Šimunić Rosing
- **Smart Cities -** Investigating context extraction and automation with distributed embedded devices (since 2014)
- **3DIC -** Built core-level thermal models for 3D-stacked mobile processors and ran architecture-level application simulations
- **Datacenters -** Measured and modeled thermal, power and performance characteristics of high-end servers to evaluate dependencies between cooling and application performance. Proposed management algorithms to reduce vibration-induced disk I/O throughput degradation.

2014 **Graduate Intern**, *Intel Federal, Hillsboro, OR*.
Exascale Analytics Group
- Developing light-weight power and energy models of CPU cores for an exascale analytics framework

2013 **Research Assistant**, *Oracle Labs, Redwood City, CA*.
Oracle RDBMS Optimizer Group
- Tuned query execution performance under various storage configurations (in-memory, hard disks and flash)
- Used server telemetry to characterize power profile of the database performance optimizer and underlying hardware

2012 **Intern**, *Futurewei Technologies, Plano, TX*.
Wireless Baseband Chipset Design
- Worked on Token-based Adaptive Power Gating (TAP), including: cross-compiled benchmarks for ARM, cycle-accurate architectural simulation, application SimPoint analysis, power analysis
- Determined SoC design methodologies and compatibility issues for implementing TAP on production chips

2011 **Interim Engineering Intern**, *Qualcomm Innovation Center, San Diego, CA*.
Linux Kernel Team
- Contributed timer bug fixes to upstream Linux community (kernel v2.6.38)
- Ported in-house DMA engine into generic Linux framework to support LTE transfer rates

2010 **Interim Engineering Intern**, *Qualcomm, Inc, San Diego, CA*.
CoreBSP Team, Qualcomm CDMA Technologies
- Designed and implemented a user-friendly API over legacy JTAG target debugging tools

2009 **Undergraduate Assistant**, *University of Illinois, Urbana Champaign*.
Performability Engineering Research Group under William H. Sanders
- Maintained nightly builds and VM-testing, created native installers for Linux distribution of Mobius modeling software

2008 **Undergraduate Programmer**, *Hong Kong Polytechnic University, Hong Kong*.
eToy Teaching Lab under Grace Ngai
- Developed interactive game on the iRobot Create for HCI research

Technical skills

Programming and scripting	C, C++, Python, Bash, Perl, Tcl, x86 assembly, OCaml
Hardware design	VHDL/Verilog, Vivado HLS, ModelSim, Quartus II, Synopsys Design Compiler, PrimeTime, Cadence Encounter
Systems development	Linux kernel development, cross-compiling, adb, Trace32
Tools and APIs	Oracle 11g, SQL*Plus, OProfile, DTrace, Matlab, Git, SVN, Perforce
Modeling	HotSpot (thermal), gem5 (architecture), McPAT (power), Möbius Modeling Environment (networks)
Operating systems	GNU/Linux, Solaris 11, Mac OS X, Windows XP/7/8

Graduate Coursework

Hardware for Embedded Systems: *Designed common wireless RF functions (e.g. FIR filter, CORDIC, DFT, FFT) and a SURF feature detector for Xilinx FPGAs (written in C++ for high-level synthesis)*
Parallel Architecture, Operating Systems, VLSI SoC Design, VLSI IC and Systems Design (RTL to GDSII physical design flow), Computer Communication Networks, Embedded Systems, Computer System Organization, Mobile Application Processor Design, Digital Communication

Awards

2012–2013 **Qualcomm Fellow-Mentor-Advisor (FMA) Fellowship**, *UC San Diego.*

2009 **IEEE/ECE Alumni Outstanding Sophomore Award**, *University of Illinois.*

2009 **Oakley Scholarship**, *Department of ECE, University of Illinois.*

Publications

[1] **Christine S. Chan**, Yanqin Jin, Yen-Kuan Wu, Kenny C. Gross, Kalyan Vaidyanathan, Tajana Simunic Rosing, *"Fan-speed-aware scheduling of data intensive jobs"*. ACM/IEEE International Symposium on Low Power Electronics and Design, 2012

[2] **Christine S. Chan**, Boxiang Pan, Kenny C. Gross, Kalyan Vaidyanathan, Tajana Simunic Rosing, *"Correcting vibration-induced performance degradation in enterprise servers."*. ACM SIGMETRICS Performance Evaluation Review, Dec 2013 [**Best Student Paper Award at GreenMetrics 2013**]