

XIAOFAN JIANG

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EDUCATION

University of California, Berkeley 8/2005-Present

- PhD in Computer Science, graduation expected 7/2010
- Master in Electrical Engineering and Computer Science, completed in 12/2007

University of California, Berkeley 9/2001-12/2004

- Bachelor of Science in Electrical Engineering and Computer Science, graduated with honors
- Minor in Business Administration
- Cumulative GPA 3.8, technical GPA 3.9

EXPERIENCES

Google, Palo Alto CA 6/2007-8/2007

Engineering Intern

- Designed scheduling and data exchange protocols of a novel CDMA/TDMA hybrid MAC, optimized for a next generation MIMO-based ultra-wideband PHY, targeted at “C” and “whitespace” TV bands.
- Four patents under review.

Intel Corporation, Santa Clara CA 2/2005-7/2005

Component Design Engineer

- Validation of Baseband Management Controller (BMC) chip using SpecmanElite and Verilog. Constructed infrastructure to validate interrupts to the embedded ARC microcontroller from internal and auxiliary sources. Validated watchdog, SerialIRQ, GPIO, and several other components.

Xilinx, San Jose CA 1/2004-7/2004

Intern Engineer

- Worked on the Gigabit System Reference Design (GSRD) project for high bandwidth systems. Designed part of the Communication Direct Memory Access Controller (CDMAC). Added coalescing interrupts, timers, support for all byte lengths and byte offsets in memory addressing.
- Designed a system to perform 3:2 video pull-down in hardware using ML300 board. Allowed video to be displayed in a moving window with animated background, using virtually no CPU time. It was used to demonstrate bandwidth and CPU utilizing of GSRD.
- Wrote interface to access and demonstrate “SystemMonitor” features of the upcoming Virtex-4 FPGA chip on the ML300 board. Worked closely using Xilinx’s Embedded Development Kit (EDK).

PROJECTS

- **Green Soda Project** is a real-time wireless energy monitoring, control, and visualization infrastructure for reducing energy consumption of Soda Hall. [<http://local.cs.berkeley.edu/greensoda>]
- **ACme: Berkeley Wireless AC Meter/Switch** is an open source hardware and software platform that enables wireless energy/power measurement and control of AC devices. ACme uses an IPv6 based mesh network that enables direct IP communication with individual ACme nodes. [<http://acme.cs.berkeley.edu/>]
- **SPOT: Scalable Power Observation Tool** enables in situ measurement of nodal power and energy over a dynamic range exceeding four decades (as small as μA) or a temporal resolution of microseconds.
- **Prometheus** is a multi-stage solar powered system architecture that utilizes sensor node’s microprocessor to intelligently and efficiently manage energy transfers between multiple storage elements, resulting in near perpetual operation. *Prometheus* is implemented in the Berkeley Trio motes.
- **Ultrasonic Ranging** is a range estimation device I designed for use in the Network Embedded Systems Technology (NEST) project for high-fidelity localization.

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BACKGROUND & SKILLS

- Signal processing, system design, control systems, wireless communications
- Digital components and design, FPGA design
- Analog design, integrated circuits, mixed signal design, microelectronic devices and circuits
- Sensors and actuators design, digital-analog interfacing, wireless sensor networks
- Database systems, PostgreSQL, MySQL, PHP
- E, C++, C, NesC, JAVA, Verilog, EDK, Perl, SPICE, Matlab, Assembly, ModelSIM, Javascript, TinyOS
- Fluent in spoken and written Chinese

HONORS & INTERESTS

- National Science Foundation (NSF) Graduate Fellowship (GRFP). 8/2006 – 8/2009
- Vodafone-US Foundation Fellows Initiative scholarship for research in wireless communications. 8/2004
- Engineering Joint Console Representative. Eta Kappa Nu (HKN) Electrical Engineering and Computer Science honor society. Berkeley 2002
- Avid badminton player. 1999-Present

SELECTED PUBLICATIONS

- Experiences with a High-Fidelity Wireless Building Energy Auditing Network
Xiaofan Jiang, Minh Van Ly, Jay Taneja, Prabal Dutta, and David Culler
The Seventh ACM Conference on Embedded Networked Sensor Systems (SenSys'09), Nov. 4-6, 2009
- Design and Implementation of a High-Fidelity AC Metering Network
Xiaofan Jiang, Stephen Dawson-Haggerty, Prabal Dutta, and David Culler
The 8th ACM/IEEE International Conference on Information Processing in Sensor Networks (IPSN'09) Track on Sensor Platforms, Tools, and Design Methods (SPOTS '09), Apr. 2009
- An Architecture for Local Energy Generation, Distribution, and Sharing
Mike M. He, Evan M. Reutzel, Xiaofan Jiang, Randy H. Katz, Seth R. Sanders, David E. Culler, Ken Lutz
IEEE Conference on Global Sustainable Energy Infrastructure (Energy2030'08), Nov. 17-18, 2008
- A Building Block Approach to Sensornet Systems
Prabal Dutta, Jay Taneja, Jaein Jeong, Xiaofan Jiang, and David Culler
The Sixth ACM Conference on Embedded Networked Sensor Systems (SenSys'08), Nov. 5-7, 2008
- An Architecture for Energy Management in Wireless Sensor Networks
Xiaofan Jiang, Jay Taneja, Jorge Ortiz, Arsalan Tavakoli, Prabal Dutta, Jaein Jeong, David Culler, Philip Levis, and Scott Shenker
International Workshop on Wireless Sensor Network Architecture (WSNA '07) April, 2007
- Micro Power Meter for Energy Monitoring of Wireless Sensor Networks at Scale
Xiaofan Jiang, Prabal Dutta, David Culler, and Ion Stoica
The Sixth International Conference on Information Processing in Sensor Networks: Special track on Platform Tools and Design Methods for Network Embedded Sensors (IPSN/SPOTS), April, 2007
- Perpetual Environmentally Powered Sensor Networks **[Received Best Paper award]**
Xiaofan Jiang, Joseph Polastre, and David Culler
The Fourth International Conference on Information Processing in Sensor Networks: Special track on Platform Tools and Design Methods for Network Embedded Sensors (IPSN/SPOTS), April, 2005
- Exploiting the Capture Effect for Collision Detection and Recovery
Kamin Whitehouse, Alec Woo, Fred (Xiaofan) Jiang, Joseph Polastre, and David Culler
The Second IEEE Workshop on Embedded Networked Sensors (EmNetS-II), May 30-31, 2005