

CONTACT INFORMATION

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EDUCATION

Ph.D. Candidate in Computer Science

University of Wisconsin–Madison Madison, WI August 2009 - Present

Master of Science in Computer Science

University of Wisconsin–Madison Madison, WI *GPA:* 3.94/4.0 May 2011

Bachelor of Science in Computer Science

Marquette University Milwaukee, WI *GPA:* 3.96/4.0 May 2009

RESEARCH INTERESTS

Mobile application offloading, Mobile networking, Network security, Embedded operating systems

CONFERENCE AND WORKSHOP PAPERS

- Shan-Hsiang Shen, Aaron Gember, Ashok Anand, and Aditya Akella. “Refactoring Content Overhearing to Improve Wireless Performance.” *MobiCom*, Las Vegas, NV, September 2011.
- Aaron Gember, Ashok Anand, and Aditya Akella. “A Comparative Study of Handheld and Non-Handheld Traffic in Campus WiFi Networks.” *Passive and Active Measurements (PAM)*, Atlanta, GA, March 2011.
- Ashok Anand, Aaron Gember, Vyas Sekar and Aditya Akella. “Tracking Semantic Relationships for Effective Content Management in Home Networks.” *ACM SIGCOMM HomeNets Workshop*, New Delhi, India, August 2010.

POSTERS AND TECHNICAL REPORTS

- Aaron Gember, Ashok Anand, and Aditya Akella. “Handheld vs. Non-Handheld Traffic: Implications for Campus WiFi Networks.” University of Wisconsin-Madison, TR1679, 2010.
- Aaron Gember and Aditya Akella. “SONOMA: Secure Opportunistic Network-Wide Offload for Mobile Applications.” *GENI Engineering Conference*, Washington, DC, November 2010.
- Aaron Gember and Aditya Akella. “Mobile Device Offloading Using Enterprise Network and Cloud Resources.” *GENI Engineering Conference*, San Diego, CA, July 2010.
- Aaron Gember and Dennis Brylow. “Real-Time TCP for Embedded Devices.” *ACM Student Research Competition Poster Session, ACM SIGCSE*, Chattanooga, TN, March 2009.

HONORS AND SCHOLARSHIPS

- National Science Foundation Graduate Research Fellowship Honorable Mention (2011)
- University of Wisconsin—Madison, Computer Science Summer Graduate Fellowship (2010)
- Third Place in the ACM Student Research Competition at SIGCSE 2009
- Marquette Univ., College of Arts & Sciences Superior Academic Achievement (2006 – 2009)
- Marquette University Dean’s List (2005 – 2009)

PROFESSIONAL AND HONORARY MEMBERSHIPS

- Association for Computing Machinery (*since March 2008*)
- Upsilon Pi Epsilon – Computer Science Honor Society (*inducted April 2009*)

- Pi Mu Epsilon – National Mathematics Honor Society (*inducted December 2007*)
- Phi Beta Kappa (*inducted April 2008*)
- Alpha Sigma Nu – Honor Society of Jesuit Colleges and Universities (*inducted April 2009*)

EXPERIENCE

Student Intern

AT&T Research

May 2011 – July 2011

Researched the challenges in measuring cellular network performance using targeted crowdsourcing of active measurements. Advised by Ramon Caceres, Jeffery Pang, and Alexander Varshavsky.

Research Assistant

Department of Computer Science, Univ. of Wisconsin–Madison

January 2010 – present

Performing research in mobile networking and systems under the advising of Aditya Akella.

Teaching Assistant

Department of Computer Science, Univ. of Wisconsin–Madison

August 2009 – December 2009

Assisted students and graded coursework for CS 536, Introduction to Compilers. Co-facilitated two lab sections for CS 302, Introduction to Programming.

Research Assistant

Math, Stats., and Comp. Sci., Marquette University

May 2007 – August 2009

Researched, designed, and implemented a full network stack, alternative interprocess communication primitives, an interactive shell, and a TTY device driver for Embedded Xinu—an embedded research operating system designed for wireless routers. Advised by Dennis Brylow.

Student Technical Support Specialist Manager

IT Services, Marquette University

January 2008 – August 2009

Supervised a group of seven Student Technical Support Specialists (STSS) to ensure the resolution of desktop support incidents and changes for faculty and administrators. Trained STSSs and administrators on university supported technologies. Lead special software development projects.

MAJOR COURSE PROJECTS

Measurement and Monitoring Using a Programmable Network Fabric

Developed OpenSAFE—a framework for distributing traffic across a multi-component monitoring infrastructure using a programmable network fabric. A NOX controller module programs a hardware OpenFlow switch based on an administrator specified policy and current network traffic. The system has higher performance than an existing monitoring infrastructure and scales with network size.

Virtual Machine Monitor for Embedded Devices

Built an embedded virtual machine monitor (VMM) for the Linksys WRT54GL wireless router. Adding a VMM to OpenWrt—a version of Linux designed for small network routers—provides benefits of security, mobility, and hardware consolidation. Embedded Xinu is run as the guest operating system in a VMM which supports bootstrapping, exception and interrupt handling, and a virtual serial device.

EXTRACURRICULARS

- *Vice President*, ACM student chapter, UW–Madison, (2011 – present)
- *Participant* in the ACM International Collegiate Programming Contest (2007, 2008)
- *President*, Linux Users Group, Marquette University (2007 – 2009)
- *Vice President*, ACM student chapter, Marquette University (2008 – 2009)