

Xiaozheng Tie

PhD Candidate
School of Computer Science
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Objective

Looking for a full-time industrial engineer and/or researcher position starting from July 2014.

Research Interests

My research interests are broadly in the areas of networks and distributed systems. I have worked on topics including large-scale domain name services, cellular and mobile networks, wireless networks.

Education

- **University of Massachusetts Amherst** Sep 2008–July 2014 (Expected)
Ph.D. Computer Science GPA: 3.9/4.0
Thesis: Enabling High Performance Applications for Diverse Mobile Networks
- **University of Massachusetts Amherst** Sep 2008–May 2011
M.S. Computer Science GPA: 3.9/4.0
- **Tsinghua University, China** Sep 2004–Jun 2008
B.S. Computer Science GPA: 90/100

Research and Internship Experiences

- **University of Massachusetts Amherst**, Research Assistant Sep 2008–Present
Advisor: Prof. Arun Venkataramani

FastMobile: Engineering High Throughput Mobile Networks Using Multiple Wireless Interfaces. Aim to design a high throughput network for mobile users by leveraging multiple wireless interfaces (e.g., WiFi and 3G/4G/LTE) on mobile phones. Working in progress.

Auspice: Global Name Resolution for Highly Mobile Internet. Designed and implemented Auspice, a massively scalable, distributed, global name resolution service that rapidly resolves identities to network locations under high mobility. The implementation involves 10,000 lines of Java code and the prototype is deployed on 100 globally geo-distributed servers in the research platform PlanetLab.

BlockRate: Wireless Bitrate Adaptation for Blocks. Designed and implemented BlockRate, a high-throughput wireless bitrate adaptation protocol for blocks or large contiguous units of transmitted data, as opposed to small packets. The implementation augmented the MadWiFi wireless driver with 2,000 lines of C code.

R3: Robust Routing in Wireless Networks with Diverse Connectivity. Designed and implemented R3, a wireless routing protocol that ensures robust performance across networks with diverse connectivity characteristics such as meshes, MANETs and DTNs. The implementation involves 20,000 lines of C/C++ code and the prototype is deployed on a 16-node wireless mesh testbed.

- **AT&T Labs Research**, Summer Intern June 2012–Aug 2012
Mentor: Dr. K. K. Ramakrishnan

Video Recommendation for Mobile Phones. Designed and implemented a personalized video recommendation application for mobile phones. The implementation involves 2,000 lines of Java code.

- **NEC Labs America**, Summer Intern May 2011–Sep 2011
Mentor: Dr. Kishore Ramachandran

Multi-Gbps Data Access with 60GHz Radios. Designed an experimental platform to measure the multi-Gbps communication performance of 60GHz radios. The implementation involves 1000 lines of C and Ruby code.

Technical Skills

- Programming Languages: Java, C/C++, Ruby, Python, Matlab
- System Software Development
 - Experienced in Unix/Linux system programming
 - Proficient in multi-threading programming and client-server network communication
 - Hacked the MadWiFi wireless driver to augment bitrate adaptation at the link layer
 - Built and maintained a 16-node wireless mesh testbed in UMass Computer Science Building
 - Familiar with network testbeds/simulators such as PlanetLab, QualNet, NS-2

Publications

Xiaozheng Tie, Arun Venkataramani. “A Global Name Service for a Highly Mobile Internet.” PhD Forum, Grace Hopper Celebration of Women in Computing (GHC), 2013

Xiaozheng Tie, Kishore Ramachandran, Rajesh Mahindra. “On 60 GHz Wireless Link Performance in Indoor Environments.” Passive and Active Measurement Conference (PAM), 2012

Xiaozheng Tie, Arun Venkataramani, Aruna Balasubramanian. “R3: Robust Replication Routing in Wireless Networks with Diverse Connectivity Characteristics.” ACM Conference on Mobile Computing and Networking (MobiCom), 2011 (Acceptance: 13%)

Xiaozheng Tie, Anand Seetharam, Arun Venkataramani, Deepak Ganesan, Dennis L. Goeckel. “Anticipatory Wireless Bitrate Control for Blocks.” ACM Conference on Emerging Networking Experiments and Technologies (CoNEXT), 2011 (Acceptance: 18%)

Xiaozheng Tie, Anand Seetharam, Arun Venkataramani, Deepak Ganesan, Dennis L. Goeckel. “Anticipatory Wireless Bitrate Control for Blocks.” S3 Workshop, ACM Conference on Mobile Computing and Networking (MobiCom), 2011

Xiaozheng Tie, Anand Seetharam, Arun Venkataramani, Deepak Ganesan, Dennis L. Goeckel. “Block-based Bitrate Control for Wireless Networks.” Poster, USENIX Symposium on Networked Systems Design and Implementation (NSDI), 2011

Honors and Awards

Microsoft Research Scholarship for Student Research Competition, Grace Hopper Celebration	2011, 2010
CRA-W Grad Cohort Scholarship	2011, 2009
ACM Travel Scholarship, Mobicom	2011
ACM Travel Grant, CoNEXT	2011
Excellent Graduate Award, Tsinghua University	2008

Professional Activities

Program Committee Member: ICNP PhD Forum 2013

Reviewer: IEEE Transactions on Networking, IEEE Transactions on Mobile Computing, MobiArch 2012

Mentor: Mentoring two female undergraduate students in the CS Women’s group at UMASS