

Vincent Liu

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Research Interests

My research is in the general area of networked systems and bridges all layers of the networking stack, from hardware concerns to application and user demands. Within computer networking, I have published in a variety of fields including data center networks, fault-tolerant distributed systems, energy-efficient wireless communication, and systems to preserve security and privacy.

Education

Ph.D., Computer Science & Engineering, August 2016
University of Washington
Thesis: “Improving Fault Tolerance and Performance of Data Center Networks”
Advisors: Tom Anderson and Arvind Krishnamurthy

M.S., Computer Science & Engineering, April 2012
University of Washington
Thesis: “F10: Fault-Tolerant Engineered Networks”
Advisors: Tom Anderson and Arvind Krishnamurthy

B.S., Turing Scholars Honors Computer Science, May 2010
B.S., Dean’s Scholars Honors Computer Science, May 2010
University of Texas at Austin
Thesis: A Compiler Alternative to Expression Templates
Advisor: Calvin Lin

Professional Experience

Facebook, December 2015 – Present
Working on a study of fine-grained traffic measurements as a part-time contractor.

Facebook, January – April 2015
Implemented and deployed a fine-grained-measurement framework to thousands of Facebook’s production switches.

Google, September – December 2013
Helped to design multiple parts of their next data center network including the network topology

Cisco Systems, June – September 2012
Researched fault-tolerant networks

Publications

Danyang Zhuo, Qiao Zhang, Xin Yang, **Vincent Liu**, “Canaries in the Network” HotNets, 2016.

Danyang Zhuo, Qiao Zhang, **Vincent Liu**, Arvind Krishnamurthy, Thomas Anderson “Rack-level Congestion Control” HotNets, 2016.

Vincent Liu, Danyang Zhuo, Simon Peter, Arvind Krishnamurthy, Thomas Anderson, “Subways: A Case for Redundant, Inexpensive Data Center Edge Links” CoNEXT, 2015.

Dan R. K. Ports, Jialin Li, **Vincent Liu**, Naveen Kr. Sharma, Arvind Krishnamurthy, “Designing Distributed Systems Using Approximate Synchrony in Data Center Networks” NSDI, 2015.

Best Paper Award

Vincent Liu, Vamsi Talla, Shyamnath Gollakota, “Enabling Instantaneous Feedback with Full-duplex Backscatter” MOBICOM, 2014.

Vincent Liu, Aaron Parks, Vamsi Talla, Shyamnath Gollakota, David Wetherall, Joshua R. Smith, “Ambient Backscatter: Wireless Communication Out of Thin Air” SIGCOMM, 2013.

Best Paper Award

Seungyeop Han, **Vincent Liu**, Qifan Pu, Simon Peter, Thomas Anderson, Arvind Krishnamurthy, David Wetherall, “Expressive Privacy Control with Pseudonyms” SIGCOMM, 2013.

Vincent Liu, Daniel Halperin, Arvind Krishnamurthy, Thomas Anderson, “F10: A Fault-Tolerant Engineered Network” NSDI, 2013.

Best Paper Award

Vincent Liu, Seungyeop Han, Arvind Krishnamurthy, Thomas Anderson, “Tor Instead of IP” HotNets, 2011.

Awards

Award Papers

- 2015 NSDI Best Paper, for “Designing Distributed Systems Using Approximate Synchrony in Data Center Networks”
- 2013 SIGCOMM Best Paper, for “Ambient Backscatter: Wireless Communication Out of Thin Air”
- 2013 NSDI Best Paper, for “F10: A Fault-Tolerant Engineered Network”

Graduate Research Fellowships

- Google Fellowship in Computer Networking, May 2014
- Qualcomm Innovation Fellowship, April 2014
- Boeing Fellowship, August 2013
- Lee Memorial Fellowship, August 2013
- Cohn Fellowship, August 2013
- College of Engineering Dean’s Fellowship, July 2013

Undergraduate Research Awards and Scholarships

- UT College of Natural Sciences Dean’s Honored Graduate, 2010
- UT Undergraduate Research Fellowship, 2008
- National Merit Semifinalist, 2006

Other Awards

Madrona Venture Group Prize Winner (for Ambient Backscatter), May 2013

Teaching

Guest Lecturer 2x for CSE 561: Graduate Computer Networks
University of Washington, Spring 2014

Teaching Assistant for CSE 552m: Distributed Systems for Professional M.S. Students

University of Washington, Spring 2012

Teaching Assistant for CSE 490h: Distributed Systems
University of Washington, Winter 2011