

# Liang Zhang

Northeastern University, 440 Huntington Ave., 266 WVH, Boston MA, 02115 • 508-250-7482  
liang@ccs.neu.edu • <http://www.ccs.neu.edu/home/liang>

## EDUCATION

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**Northeastern University**, Boston, MA

College of Computer and Information Science

Ph.D. in Computer Science Sept.2011 - present

Advisor: Alan Mislove

Master in Computer Science Sept.2009 - July 2011

Mentor: Alan Mislove and Tim Bickmore

**South China Agricultural University**, Guangzhou, China

College of Informatics

B.S. in Computer Science and Technology Sept.2005 - July 2009

- Awarded excellent graduation thesis

## RESEARCH EXPERIENCE

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**Networked Systems Research Group, Northeastern University**, Boston, MA May.2011 - present

Research Assistant

- Developed an alternative approach for cloud computation based on a process-like abstraction rather than a virtual machine abstraction, thereby gaining the scalability and efficiency of PaaS along with the generality of IaaS. The system achieves the best of both worlds by enabling fast swapping of applications to and from cloud storage.
- Measured certificate revocation after Heartbleed OpenSSL bug publicly announced by crawling Alexa top one million domains; discovered that almost 80% of vulnerable certificates have yet to be reissued, and over 90% have yet to be revoked three weeks after Heartbleed was disclosed
- Designed and implemented Priv.io, a new approach to building Web-based services that offer users greater control and privacy over their data, by leveraging users' browsers for computation, such as attribute-based encryption, and integrating user provided cloud services such as Amazon S3
- Designed and implemented Maygh, a P2P content delivery network (CDN) that runs in user's web browser, exchanging content with other users via RTMFP or WebRTC. Our experiment showed that it would reduce the 95<sup>th</sup>-percentile bandwidth required to distribute image content on Etsy by 75%
- Designed and implemented WebCloud, a scalable content distribution system that recruits social network sites users to assist content distribution. We showed a potential to serve over 40% when integrating with Facebook photo browsing

**Relational Agent Group, Northeastern University**, Boston, MA Oct.2009 - April 2011

Research Assistant

- Designed and developed a Relational Agents client in C#
- Redesigned agent animation system using graph representation
- Modularized agent system components to ease extensions

Research Assistant

- Created a series Java SWING components with fix-length fisheye effect to improve navigation in list
- Developed constant time algorithms on updating fisheye items size in UI components

## CONFERENCE PUBLICATIONS

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- **Picocenter: Supporting long-lived, mostly-idle applications in cloud environments**  
**Liang Zhang**, James Litton, Frank Cangialosi, Theophilus Benson, Dave Levin and Alan Mislove  
EuroSys 2016, London, UK
- **An End-to-End Measurement of Certificate Revocation in the Web's PKI**  
Yabing Liu, Will Tome, **Liang Zhang**, David Choffnes, Dave Levin, Bruce Maggs, Alan Mislove, Aaron Schulman, and Christo Wilson  
IMC 2015, Tokyo, Japan
- **Analysis of SSL certificate reissues and revocations in the wake of Heartbleed**  
**Liang Zhang**, Dave Choffnes, Tudor Dumitras, Dave Levin, Alan Mislove, Aaron Schulman and Christo Wilson  
IMC 2014, Vancouver, BC, Canada
- **Building confederated Web-based services with Priv.io**  
**Liang Zhang** and Alan Mislove  
COSN 2013, Boston, MA
- **Maygh: Building a CDN from client web browsers**  
**Liang Zhang**, Fangfei Zhou, Alan Mislove and Ravi Sundaram  
EuroSys 2013, Prague, Czech Republic
- **WebCloud: Recruiting social network users to assist in content distribution**  
Fangfei Zhou, **Liang Zhang**, Eric J. Franco, Richard Revis, Alan Mislove and Ravi Sundaram  
IEEE NCA 2012, Cambridge, MA
- **LensList: Browsing and Navigating Long Linear Information Structures**  
Hongzhi Song, Yu Qi, Yun Liang, Hongxing Peng and **Liang Zhang**  
Symposium on Human Interface 2007, Beijing, China

## POSTERS AND JOURNAL

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- **Picocenter: Supporting long-lived, mostly-idle applications in cloud environments**  
**Liang Zhang**, Frank Cangialosi, Theophilus Benson, Dave Levin and Alan Mislove  
Poster, SoCC 2015, Big Island, Hawaii
- **Crowdsourcing functions of the living city from Twitter and Foursquare data**  
Xiaolu Zhou and **Liang Zhang**  
Cartography and Geographic Information Science, DOI: 10.1080/15230406.2015.1128852
- **Maygh: Building a CDN from client web browsers**  
**Liang Zhang**, Fangfei Zhou, Alan Mislove and Ravi Sundaram  
Poster, EuroSys 2013, Prague, Czech Republic

- **Cursor caging: enhancing focus targeting in interactive fisheye views**  
HongZhi Song, Yi Fu, **Liang Zhang**, XiaoLong Zhang  
Science China Information Sciences 56, no. 5 (2013): 1-16
- **WebCloud: Enabling More Direct Content Exchange Between Web Clients**  
Fangfei Zhou, **Liang Zhang**, Eric J. Franco, Richard Revis, Alan Mislove and Ravi Sundaram  
Poster and demo, NSDI 2011, Boston, MA

## PROFESSIONAL EXPERIENCE

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**Google, Seattle WA** Oct 2014 - Jan 2015

Internship

- Work on monitoring features for Google Cloud Dataflow

**Yottaa, Inc., Boston MA** June 2013 - Aug 2013

Internship

- Designed and built a prototype system to optimize 3rd party tags performance on web pages by developing a JavaScript browser-side script for dynamic content loading

**Geeksoft Team of Guangdong Evsoft Co., Ltd., China** July 2007 - Aug 2008

Part-time Software Engineer

- Programmed and deployed a .NET component to render Google KML and to generate Excel document for Stations Intelligent Management System, China Mobile, Shaoguan branch

**Guangzhou Lenx Automatic Identification Tech Co., Ltd., China** July 2006 - Aug 2006

Intern Developer

- Developed warehouse management system using Microsoft Software Factory and led a team in user interface design

## Teaching

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Teaching Assistant CS 3600, Systems and Networks Fall 2013, Spring 2014

Guest lectured on: C bootcamp, scheduling, threads, Internet architecture, data-link layer, Ethernet, TCP and congestion control

## Service

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- Reviewer for Cartography and Geographic Information Science
- Reviewer for IEEE Transactions on Circuits and Systems for Video Technology

## HONORS

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- SoCC 2015 Student Scholarship
- Sigcomm 2014 Travel Grant
- Research Award 2014 from College of Computer and Information Science, Northeastern University
- SOSP 2013 Student Scholarship
- EuroSys 2013 Travel Grant
- Scholarship awards from South China Agricultural University

- 3rd Prize, Guangdong College Cup Software Design Competition, 2008

## **COMPUTER KNOWLEDGE**

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Proficient in JavaScript, C#, C/C++, Python, Java and SQL

Familiar with Racket, Scheme, UML, PLT Redex and ActionScript

Experienced in Linux/UNIX/OSX, Windows, UDP/TCP Socket programming, Web Application

## **EXTRACURRICULAR ACTIVITIES AND ACCOMPLISHMENTS**

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- *Qualification Certificate of Computer and Software Technology Proficiency, China*
- Organized lectures on .NET topics at South China Agricultural University
- Hosted English Competition in South China Agricultural University

## **REFERENCES**

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Available upon request