

# Amy Xian Zhang

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## RESEARCH INTERESTS

Social computing, CSCW, computational social science, human-computer interaction, data science, information visualization, natural language processing

## EDUCATION

**Massachusetts Institute of Technology**, Cambridge, MA Jan 2014 – Present

### Ph.D. Computer Science

Computer Science Artificial Intelligence Lab: Haystack Group and UID Group

Advisor: David Karger

**University of Cambridge**, Cambridge, UK

Oct 2011 – June 2012

### M.Phil. Advanced Computer Science

Graduated with Distinction

Networks and Operating Systems Group

Advisor: Cecilia Mascolo

Thesis: Defining and Characterizing Urban Neighborhoods using Location-based Social Media

**Rutgers University**, New Brunswick, NJ

Sept 2007 – May 2011

### B.S. Computer Science, Minor: Mathematics, Economics

Summa Cum Laude

Social Media Information Lab

Advisor: Mor Naaman

Thesis: Time Series Analysis of Twitter with Hadoop

## SELECTED AWARDS AND HONORS

Google Research PhD Fellowship 2016-2019

CHI Best Paper Honorable Mention 2015

NSF Graduate Research Fellowship 2014-17

Gates Cambridge Scholar 2011-12

Novelli Award (awarded to top senior in CS by Rutgers CS Faculty) 2010-11

Madgison Award (awarded to top junior in CS by Rutgers CS Faculty) 2009-10

Rutgers University Presidential Scholarship (full academic scholarship) 2007-11

## PUBLICATIONS

### Refereed Conference Papers

- [c.11] **Amy X. Zhang**, Lea Verou, David Karger. Wikum: Bridging Discussion Forums and Wikis Using Recursive Summarization. In *Proceedings of the ACM Conference on Computer Supported Cooperative Work and Social Computing* (CSCW 2017). Portland, Oregon. Feb 2017. Acceptance rate: 34%
- [c.10] Lea Verou, **Amy X. Zhang**, David Karger. Mavo: Creating Interactive Data-Driven Web Applications by Authoring HTML. In *Proceedings of the ACM User Interface Software and Technology Symposium* (UIST 2016). Tokyo, Japan. Oct 2016. Acceptance rate: 21%

- [c.9] **Amy X. Zhang**, Scott Counts. Gender and Ideology in the Spread of Anti-Abortion Policy. *In Proceedings of the ACM Conference on Human Factors in Computing Systems* (CHI 2016). San Jose, CA. April 2016. Acceptance rate: 23%
- [c.8] **Amy X. Zhang**, Joshua Blum, David Karger. Opportunities and Challenges Around a Tool for Social and Public Web Activity Tracking. *In Proceedings of the ACM Conference on Computer Supported Cooperative Work and Social Computing* (CSCW 2016). San Francisco, CA. Feb. 2016. Acceptance rate: 25%
- [c.7] **Amy X. Zhang**, Scott Counts. Modeling Ideology and Predicting Policy Change with Social Media: Case of Same-Sex Marriage. *In Proceedings of the ACM Conference on Human Factors in Computing Systems* (CHI 2015). Seoul, Korea. April 2015. Acceptance rate: 23%. **Best of CHI Honorable Mention - Top 5% of Submissions.**
- [c.6] **Amy X. Zhang**, Mark S. Ackerman, David R. Karger. Mailing Lists: Why Are They Still Here, What's Wrong With Them, and How Can We Fix Them? *In Proceedings of the ACM Conference on Human Factors in Computing Systems* (CHI 2015). Seoul, Korea. April 2015. Acceptance rate: 23%.
- [c.5] Edward Benson, **Amy X. Zhang**, David R. Karger. Spreadsheet Driven Web Applications. *In Proceedings of the ACM User Interface Software and Technology Symposium* (UIST 2014). Honolulu, Hawaii. Oct 2014. Acceptance rate: 22%
- [c.4] Juho Kim, **Amy X. Zhang**, Jihee Kim, Robert Miller, Krzysztof Gajos. Content-Aware Kinetic Scrolling for Supporting Web Page Navigation. *In Proceedings of the ACM User Interface Software and Technology Symposium* (UIST 2014). Honolulu, Hawaii. Oct 2014. Acceptance rate: 22%.
- [c.3] Nick Diakopoulos, **Amy X. Zhang**, Dag Elgesem, Andrew Salway. Identifying and Analyzing Moral Evaluation Frames in Climate Change Blog Discourse. *In Proceedings of the International AAAI Conference on Weblogs and Social Media* (ICWSM '14). Ann Arbor, MI. June 2014. Acceptance rate: 41%.
- [c.2] **Amy X. Zhang**, Anastasios Noulas, Salvatore Scellato, Cecilia Mascolo. Hoodsquare: Modeling and Recommending Neighborhoods in Location-based Social Networks. *In Proceedings of the International ASE/IEEE Conference on Social Computing* (SocialCom '13). Washington, D.C. June 2013. Acceptance rate: 9.9%.
- [c.1] Mor Naaman, **Amy X. Zhang**, Sam Brody, Gilad Lotan. On the Study of Diurnal Urban Routines on Twitter. *In Proceedings of the International AAAI Conference on Weblogs and Social Media* (ICWSM '12). Dublin, Ireland. June 2012. Acceptance rate: 20%.

#### Refereed Journal Articles

- [j.1] **Amy X. Zhang**, Anastasios Noulas, Salvatore Scellato, Cecilia Mascolo. Hoodsquare: Modeling and Recommending Neighborhoods in Location-based Social Networks. *ASE Human Journal*. 2.01 (2013): pp 40-54. Acceptance rate: 3.8%. **Invited Publication.**

## Refereed Abstracts, Demos, and Workshop Papers

- [w.6] **Amy X. Zhang**, Joshua Blum, David Karger. Reimagining Web Activity Tracking for Social Applications.. In *Proceedings of the Everyday Surveillance Workshop at ACM Conference on Human Factors in Computing Systems* (CHI 2016). San Francisco, CA. Workshop Paper
- [w.5] **Amy X. Zhang**, David Karger, Anant Bhardwaj. Confer: A Conference Recommendation and Meetup Tool. In *Proceedings of the ACM Conference on Computer Supported Cooperative Work and Social Computing* (CSCW 2016). San Francisco, CA. Integrated Demo Paper.
- [w.4] **Amy X. Zhang**, Joshua Blum, David Karger. Eyebrowse: Selective and Public Web Activity Sharing. In *Proceedings of the ACM Conference on Computer Supported Cooperative Work and Social Computing* (CSCW 2016). San Francisco, CA. Integrated Demo Paper.
- [w.3] Nick Diakopolous, Dag Elgesem, Andrew Salway, **Amy X. Zhang**, Knuf Hofland. Compare Clouds: Visualizing Text Corpora to Compare Media Frames. In *Proceedings of ACM Intelligent User Interfaces Workshop on Visual Text Analytics* (TextVis @ IUI '15). Atlanta, Georgia. March 2015.
- [w.2] Yelena Mejova, **Amy X. Zhang**, Nicholas Diakopoulos, Carlos Castillo. Controversy and Sentiment in Online News. In *Proceedings of the 3<sup>rd</sup> Computation + Journalism Symposium* (C+J '14). New York, NY. October 2014.
- [w.1] Nick Diakopolous, **Amy X. Zhang**, Andrew Salway. Visual Analytics of Media Frames in Online News and Blogs. In *Proceedings of the IEEE InfoVis Workshop on Interactive Visual Text Analytics* (TextVis @ InfoVis '13). Atlanta, Georgia. October 2013.

## RESEARCH EXPERIENCE

**Graduate Student, MIT CSAIL**, Cambridge, MA Jan 2014 – Present  
Researching the way we conduct discourse and share information on the Internet, and creating interfaces and systems to facilitate new or better ways of interaction. Projects include Eyebrowse: social web browsing, and Murmur: a mailing list and social media hybrid system. [c.6][c.8][w.4][w.5][w.6]  
*Advisor: David Karger*

**Research Intern, Queriosity Group, Google Research**, Mountain View, CA May 2016 – Aug 2016  
Characterizing and extracting informational content, such as Q&A, from online forums for the benefit of better question-answering systems and an improved interface for forum results in Google Search.  
*Advisor: Bryan Culbertson, Praveen Paritosh*

**Research Intern, SIR Group, Google Research**, Mountain View, CA May 2015 – Aug 2015  
Exploring using crowd work to evaluate and refine clusters, specifically in the context of clustered search results on the Google Play app store.  
*Advisor: Jilin Chen, Lichan Hong, Ed Chi*

**Research Intern, neXus Group, Microsoft Research**, Redmond, WA June 2014 – Sept 2014  
Identifying population-level ideological shifts and predicting policy change at the state level from expressions made on Twitter by constituents. Case study of same-sex marriage and abortion. [c.7][c.9]  
*Advisor: Scott Counts*

**Researcher, NewsCred, New York, NY** Sept 2012 – Jan 2014  
Project LingoScope: visualization tool to be able to compare framing differences between news sources on issues. Organized and aggregated dataset of over 1.5 million articles from 14 news sources. Aggregated additional 1.4 million blog posts related to climate change. [c.3][w.1][w.2][w.3]

**Masters Student, Cambridge Computer Laboratory, Cambridge, UK** Nov 2011 – Sept 2012  
Defining geographic neighborhoods in urban cities using density-based spatial clustering, based on different characteristics of Foursquare data, including place categories, local/tourist, and temporal traffic. Conducted user studies, built web visualization, and built neighborhood recommendation system given a user's Twitter profile information. [c.2][j.1]  
*Advisor: Salvatore Scellato, Anastasios Noulas, Cecilia Mascolo*

**Research Assistant, Yahoo! Research Labs, New York, NY** May 2011 – Sept 2011  
Using Twitter Firehose data, built largest known dataset of tweets geo-tagged for 58 cities. Analyzed the aggregate temporal patterns of top 10,000 terms in each city and developed statistical measures to determine keywords that demonstrate robust diurnal patterns. [c.1]  
*Advisor: Mor Naaman, Jake Hofman*

**Thesis, Rutgers Social Media and Information Lab, New Brunswick, NJ** Sept 2010 – May 2011  
Built a Hadoop framework to quickly query large quantities of Twitter data for temporal patterns  
*Advisor: Mor Naaman*

## WORK EXPERIENCE

**Software Engineer, NewsCred, New York, NY** Sept 2012 – Jan 2014  
Backend engineer overseeing production API receiving 15 million+ hits/day delivering relevant news content and search indexes and databases storing over 150 million artifacts  
Owner of image system and real-time analytics system serving 10 million+ images/day  
Lead backend developer on migration of acquired startup Daylife – built new API serving 25 million requests/day.

## TEACHING

**Instructor, “Exploring Computer Science Seminar,” Rutgers University** Sept 2009 – Dec 2009  
Instructed class of 18 freshmen on introductory computer science topics for university credit. Individually designed syllabus and lesson plans, distributed grades, and arranged for trip to Google NYC.

## INVITED TALKS

<b>Wikimedia Research Showcase, Wikimedia Foundation, San Francisco, CA</b>	Sept 2016
Designing and Building Online Discussion Systems	
<b>Common Sense Group, Google Research, Mountain View, CA</b>	Sept 2016
Uncovering Q&A Content from Forums	
<b>Google PhD Fellowship Summit, Mountain View, CA</b>	Aug 2016
Research at the Intersection of HCI and Machine Intelligence	
<b>Adobe Research, San Jose, CA</b>	Aug 2016
Re-imagining Web Activity Tracking for Personal and Social Benefits	
<b>Stanford HCI Seminar, Palo Alto, CA</b>	July 2016
Designing and Building Online Discussion Systems	
<b>MIT CSAIL Graphics Group, Cambridge, MA</b>	Mar 2016

Discussions on the Web: Understanding and Design  
**Boston University Image and Video Computing Group**, Boston, MA Feb 2016  
 Human Evaluation and Refinement of Search Clusters  
**Google Research**, Mountain View, CA Aug 2015  
 Refinery: Cluster Evaluation and Refinement using Crowd Workers for Mobile App Search  
**Harvard Berkman Center Cooperation Group**, Cambridge, MA Mar 2015  
 Mailing Lists: Why Are They Still Here, What's Wrong With Them, and How Can We Fix Them?  
**MSR neXus Group**, Redmond, WA Sept 2014  
 Modeling Ideology and Predicting Policy Change with Social Media: Case of Same-Sex Marriage

## PATENTS

Google Research Filed Jan 2016  
 Jilin Chen, **Amy X. Zhang**, Sagar Jain, Lichan Hong, Ed Chi. "Crowdsourced Evaluation and Refinement of Search Clusters"

## OTHER AWARDS AND HONORS

Microsoft Research Travel Grant to CHI 2015  
 ICWSM 2014 Student Grant Award

## SERVICE

**Organizing Committee:** Student Volunteer Co-Chair – RecSys 2016  
**Program Committee:** CHI Late-Breaking Work 2016, ICWSM 2014-17  
**Reviewer:** CHI 2015-16, CSCW 2015-16, UbiComp 2014, ICWSM 2014-16, UIST 2016  
**Recognized for Excellence in Reviewing:** CSCW 2015, CHI 2016  
**Student Volunteer:** CSCW 2016, UIST 2016  
**Member:** ACM, ACM SIGCHI, ASE, IEEE, AAAI  
**Website:** Organized Confer for 10+ conferences

## Mentoring

Research Mentor to MIT undergraduates Sept 2014 – Present  
 - Fall 2016 – Spring 2017: Kaitlin Mahar, MEng, Squadbox Project  
 - Spring 2016: Kaitlin Mahar, UAP, Murmur Project  
 - Fall 2015 – Spring 2016: Kelly Zhang, UROP, Eyebrowse Project  
 - Spring 2015 – Spring 2017: Joy Yu, UROP, Murmur Project  
 - Fall 2014 – Bradley Eckert, UAP, Eyebrowse Project  
 Resident Tutor, Cabot House, Harvard University Aug 2013 – Present  
 - Perform residential duties at undergrad house of 200+ students, including study breaks, on-call help  
 - 4 hours weekly of career advising, computer science tutoring, event planning  
 - Individual mentorship paired with ~7 incoming sophomores each year  
 Peer Mentor, C.S. Tutor, School of Arts and Sciences Honors Program, Rutgers Jan 2008 – May 2011

## Hackathons

Co-organized CODEX Literary Hackathon at MIT Media Lab Jan 8-10<sup>th</sup> 2016  
 2<sup>nd</sup> place prize at Hacking iCorruption at MIT Media Lab and Harvard Mar 28<sup>th</sup> 2015  
 Taught user interface design course to HackLearning workshop at MIT Jan 24<sup>th</sup> 2015

## Leadership

Volunteer Assistant Coach, MIT Varsity Women's Tennis Team Sept 2014 – Present  
1<sup>st</sup> Team, Cambridge Varsity Tennis Women's Blues Squad Oct 2011 – July 2012  
- 4 practices/week, weekly competitions in the UK and Portugal, defeated Oxford at Varsity Match  
President, Women in Computer Science at Rutgers Sept 2007 – May 2011  
- Organized career, social, and tutoring events and fundraising for Nigerian nonprofit W.TEC  
Captain, 1<sup>st</sup> position, Rutgers Division I Varsity Women's Tennis Team Sept 2007 – May 2011  
- Led team of 8 student-athletes through 3 hours/day practice, weekly competitions and travel  
Executive Board, Rutgers Student-Athlete Advisory Committee Jan 2009 – May 2011  
- Organized volunteer and social events for student-athletes: soup kitchen, toy drive, and fundraising

## TECHNICAL SKILLS

Languages: Experienced: Python, Java, C  
Familiar: Go, Pig, x86 Assembly, Prolog, Scheme, C++, C#, Matlab  
Front-end: HTML, CSS, Javascript, jQuery, Backbone.js, D3, Bootstrap, PHP, JSP  
Data Analysis: matplotlib, scikit-learn, NetworkX, R, nltk  
Apps/Libraries: Django, RabbitMQ, Celery, Apache Solr, Apache Hadoop, ElasticSearch, OpenStack, AWS EC2, S3, browser extensions, Android apps, Puppet  
Databases: MySQL, MongoDB, PostgreSQL, IndexedDB, DynamoDB, Redis, CouchBase  
OS: Windows, Linux (Ubuntu), Mac OSX

## ATHLETIC AND SPORTSMANSHIP/LEADERSHIP AWARDS

Awarded a Full Blue for defeating Oxford at Annual Oxbridge Varsity Match 2012  
National ITA/Arthur Ashe Jr. Sportsmanship and Leadership Award 2011  
Academic National All-American 3<sup>rd</sup> Team 2011  
Big East Postgraduate Leadership Award 2011 - \$7,500  
Big East Scholar Athlete of the Year 2011 - \$7,000  
Rutgers Athletic Dept. Headley-Singer Award, Sonny Werblin Award, and Leadership Award 2011  
Voted Captain of the Tennis Team 2010-11, Most Valuable Player 2009-10  
Ranked nationally in doubles, regionally in the Northeast US in singles  
NJ Assoc. of Intercollegiate Athletics for Women – Rutgers Woman of the Year 2010  
Big East Sport Excellence Award 2009-10  
ITA Scholar-Athlete 2007-10  
All-Big East Team Selection 2009, 2010  
Rutgers Representative at NCAA National Student-Athlete Development Conference, May 2009  
NJ Division I, II Female Athlete of the Year 2009  
Rutgers Freshman Athlete of the Year 2007-08  
Awarded Full Athletic Scholarship to Rutgers 2007-11

## REFERENCES

Advisors and collaborators who have written references for me in the past:

David Karger, Professor at MIT CSAIL  
Scott Counts, Senior Research Scientist at Microsoft Research  
Mor Naaman, Professor at Cornell Tech  
Jilin Chen, Research Scientist at Google Research  
Cecilia Mascolo, Professor at University of Cambridge  
Salvatore Scelatto, Research Scientist at Google Research

Nicholas Diakopolous, Professor at University of Maryland