

Toby Jia-Jun Li

Curriculum Vitae

Human-Computer Interaction Institute
School of Computer Science
Carnegie Mellon University
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Research Interests

Human-Computer Interaction (HCI), Intelligent User Interface, End-User Programming, Programming by Demonstration, Multi-modal Interaction, Conversational Intelligent Agent.

Education

Ph.D. in Human-Computer Interaction (*in progress*) **2015 – Present**
Carnegie Mellon University, *Pittsburgh, PA*
Human Computer Interaction Institute, School of Computer Science
Advisor: Dr. Brad A. Myers

B.S. with Distinction in Computer Science **2012 – 2015**
University of Minnesota, *Minneapolis, MN*
Department of Computer Science and Engineering
Advisor: Dr. Brent J. Hecht

Peer-reviewed Conference Papers

- [C.1] **Toby Jia-Jun Li**, Yuanchun Li, Fanglin Chen and Brad A. Myers. 2017. Programming IoT Devices by Demonstration Using Mobile Apps. *End-User Development. International Symposium on End User Development (IS-EUD) 2017. LNCS, vol. 10303. Best Paper Award.*
- [C.2] **Toby Jia-Jun Li**, Amos Azaria and Brad A. Myers. 2017. SUGILITE: Creating Multimodal Smartphone Automation by Demonstration. *Proceedings of the 2017 CHI Conference on Human Factors in Computing Systems (CHI 2017). Best Paper Honorable Mention Award.*
- [C.3] Isaac Johnson, Yilun Lin, **Toby Jia-Jun Li**, Andrew Hall, Aaron Halfaker, Johannes Schöning and Brent Hecht. 2016. Not at Home on the Range: Peer Production and the Urban/Rural Divide. *Proceedings of the 2016 CHI Conference on Human Factors in Computing Systems (CHI 2016).*
- [C.4] **Toby Jia-Jun Li**, Shilad Sen and Brent Hecht. 2014. Leveraging Advances in Natural Language Processing to Better Understand Tobler’s First Law of Geography. *Proceedings of the 22nd ACM SIGSPATIAL International Conference on Advances in Geographic Information Systems (SIGSPATIAL 2014).*
- [C.5] Shilad Sen, **Toby Jia-Jun Li**, WikiBrain Team and Brent Hecht. 2014. WikiBrain: Democratizing Computation on Wikipedia. *Proceedings of the 10th International Symposium on Open Collaboration (OpenSym / WikiSym 2014).*

Peer-reviewed Journal Papers

- [J.1] **Toby Jia-Jun Li**, Shilad Sen and Brent Hecht. 2016. Using Natural Language Processing to Shed New Insight on Tobler's First Law. **In submission** to *ACM Transactions on Spatial Algorithms and Systems (TSAS)*.

Book Sections

- [B.1] Brad A. Myers, Andrew Ko, Chris Scaffidi, Stephen Oney, YoungSeok Yoon, Kerry Chang, Mary Beth Kery and **Toby Jia-Jun Li**. 2017. Making End User Development More Natural. Chapter of *New Perspectives in End-User Development*, Fabio Paternò and Volker Wulf, eds. Springer, 2017.

Workshop Papers

- [W.1] **Toby Jia-Jun Li**, Brad A. Myers, Amos Azaria, Igor Labutov, Alexander I. Rudnicky and Tom M. Mitchell. 2017. Designing a Conversational Interface for a Multimodal Smartphone Programming-by-Demonstration Agent. *Conversational UX Design CHI 2017 Workshop*.
- [W.2] **Toby Jia-Jun Li** and Brad A. Myers. 2016. Smartphone Text Entry in Cross-Application Tasks. *CHI 2016 Workshop on Inviscid Text Entry and Beyond*.

Presentations, Posters and Demos

- [P.1] **Toby Jia-Jun Li**, Josh Ford, Doug Downey, Brent Hecht, Vijay Murganoor and Shilad Sen. 2015. Atlasify – The Geography of Everything. *3M Science and Engineering Symposium*. St Paul, MN. June 25, 2015.
- [P.2] **Toby Jia-Jun Li**, Josh Ford, Doug Downey, Brent Hecht, Vijay Murganoor and Shilad Sen. 2015. Atlasify – The Geography of Everything. *The Social Media and Business Analytics Collaborative (SOBACO) Spring Research Symposium*. Minneapolis, MN. May 14, 2015.
- [P.3] **Toby Jia-Jun Li** and Brent Hecht. 2014. WikiBrain: Making Computer Programs Smarter with Knowledge from Wikipedia. *The Social Media and Business Analytics Collaborative (SOBACO) Spring Research Symposium*. Minneapolis, MN. May 6, 2014.
- [P.4] **Toby Jia-Jun Li** and Brent Hecht. 2014. WikiBrain: Making Computer Programs Smarter with Knowledge from Wikipedia. *University of Minnesota Undergraduate Symposium*. Minneapolis, MN. April 16, 2014.

Research Experience

Research Intern

Microsoft Research, Redmond, WA
Mentor: Dr. Oriana Riva

Summer 2017

Graduate Research Assistant

Human-Computer Interaction Institute, Carnegie Mellon University

- Working on SUGILITE, a multi-modal mobile programming by demonstration system that enables end-users to create generalized automation for arbitrary task in any third-party Android app through a conversational intelligent agent.

2015 – present

Research Assistant**2013 – 2015**

GroupLens Research, University of Minnesota

- Developed ATLASIFY – a novel information retrieval / interactive visualization system supporting exploratory search.
- Built large portions of WIKIBRAIN – a popular open-source software framework for knowledge mining and computation on Wikipedia.
- Conducted the first robust evaluation of Tobler’s First Law of Geography leveraging advances in Wikipedia-based natural language processing

Teaching Experience**Teaching Staff, CSCI 5715: From GPS and Google Maps to Spatial Computing****Fall 2014**Coursera MOOC & Dept. of Computer Science and Engineering at the U of Minnesota
Recorded video lectures, designed assignments and monitored the discussion forum.**Teaching Assistant, CSCI 2011: Discrete Structures of Computer Science****Fall 2013, Spring 2014**

Dept. of Computer Science and Engineering at University of Minnesota

Led recitation sessions, held office hours and graded assignments.

Selected Honors, Grants and Awards

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| IS-EUD 2017 Best Paper Award | 2017 |
| CHI 2017 Best Paper Honorable Mention Award | 2017 |
| Yahoo! InMind Fellowship (\$200,000 over 2 years) | 2016 – 2017 |
| 2016 Bosch/Bezirk Internet of Things Hackathon – 1st place (\$1,000) | 2016 |
| University of Minnesota Gold Global Excellence Scholarship (\$33,680 over 4 years) | 2012 – 2015 |
| UROP Undergraduate Research Opportunity Program Grant (\$1,400) | 2013 – 2014 |
| NSF Travel Grant for ACM SIGSPATIAL ’14 (\$720) | 2014.10 |
| ESRI Scholarship (\$2,000) | 2014.5 |
| University of Minnesota Cultural Corps Awards (\$150) | 2014.5 |
| University of Minnesota College of Science and Engineering: Dean’s List | 2012 – 2015 |
| ACM/ICPC International Collegiate Programming Contest Word Final Qualifier | 2013 |
| AP Scholar with Distinction | 2011 |

Languages**English** – Native or bilingual proficiency, **Chinese (Mandarin)** – Native or bilingual proficiency**Technical Skills****Programming Languages:** C/C++, Java, Python, Scheme, Android, JavaScript, SQL, HTML and others**Operating Systems:** Windows, Linux and Mac OS X**Software:** Matlab, R, QGIS, ArcGIS, PostgreSQL, Microsoft Office, LaTeX and others