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. To appear in *Proceedings of the International Symposium on End User Development (IS-EUD 2017)*.

[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)*.

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 **Summer 2017**
Microsoft Research, Redmond, WA

Graduate Research Assistant **2015 – present**
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.

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

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