

Tianyi Li

Curriculum Vitae

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<https://scholar.google.com/citations?user=qeOqvW8AAAAJ>

Appointment

- Aug 2021 – **Purdue University**, West Lafayette, IN
Assistant Professor, Department of Computer and Information Technology
- 2020 – 2021 **Loyola University Chicago**, Chicago, IL
Assistant Professor, Department of Computer Science

Education

- 2015-2020 **Ph.D.**, *Computer Science*, Virginia Tech.
- 2011-2015 **B.Eng.** (Division One Honor), *Computer Science*, The University of Hong Kong.
- 2014 Visiting (Provost Honors), *Computer Sci. & Eng.*, University of California, San Diego.
- 2011 Visiting, *Mechanical Engineering*, Shanghai Jiaotong University.

Professional Experience

- Jun-Aug 2019 **Microsoft Research**, Redmond, WA
Research Intern | *Hosts: Dr. Mihaela Vorvoreanu, Dr. Saleema Amershi*
- May-Aug 2018 **Cloudera**, Palo Alto, CA
Research Intern | *Host: Dr. Gregorio Convertino*
- May-Aug 2017 **Informatica**, Redwood City, CA
Research Intern | *Host: Dr. Gregorio Convertino*
- 2015-2020 **Virginia Tech**, Blacksburg, VA
Graduate Research Assistant | Graduate Teaching Assistant
- Jun-Aug 2014 **Institute of Automation, Chinese Academy of Sciences**, Beijing, China
Undergraduate Research Intern | *Host: Dr. Chengqing Zong*

Publications

- [J.3] **Tianyi Li**, Mihaela Vorvoreanu, Derek DeBellis, Saleema Amershi. Assessing the UX Impact of Human-AI Interaction Guidelines. *ACM Transactions on Computer-Human Interaction* 2022
- [J.2] Maoyuan Sun, Akhil Namburi, David Koop, Jian Zhao, **Tianyi Li**, Haeyong Chung. Towards Systematic Design Considerations for Visualizing Cross-View Data Relationships. *IEEE Transactions on Visualization and Computer Graphics*, **IEEE TVCG 2021** (2021/8/6)
- [J.1] Andrew Anderson, Rupika Dikkala, **Tianyi Li**, Mihaela Vorvoreanu, Margaret Burnett. Understanding Diversity in Human-AI Data: What Cognitive Style Disaggregation Reveals. *arXiv preprint arXiv:2108.00588*
- [C.4] **Tianyi Li**, Yasmine Belghith, Chris North, Kurt Luther. CrowdTrace: Visualizing Provenance in Distributed Sensemaking. In *31st IEEE Visualization Conference*, **IEEE VIS 2020 - Short Papers**. (59/164 = 36% acceptance rate)

- [C.3] **Tianyi Li**, Chandler J. Manns, Chris North, and Kurt Luther. Dropping the Baton? Understanding Errors and Bottlenecks in a Crowdsourced Sensemaking Pipeline. *Proceedings of the ACM on Human-Computer Interaction*, **CSCW**. Article 136 (November 2019), 26 pages. (205/658 = 31.2% acceptance rate)
 - [C.2] **Tianyi Li**, Gregorio Convertino, Ranjeet Kumar Tayi, and Shima Kazerooni. What data should I protect?: recommender and planning support for data security analysts. *Proceedings of the 24th International Conference on Intelligent User Interfaces (IUI '19)*. ACM, New York, NY, USA, 286-297 (70/282=25% acceptance rate)
 - [C.1] **Tianyi Li**, Kurt Luther, and Chris North. CrowdIA: Solving Mysteries with Crowdsourced Sensemaking. *Proceedings of the ACM on Human-Computer Interaction*, **CSCW**. Article 105 (November 2018), 29 pages. (185/722=25.6% acceptance rate)
Workshop Papers and Demos
 - [W.5] Yue Ma, Courtney Bolton, Maoyuan Sun, Yuanxin Wang, Jian Zhao, **Tianyi Li**. Toward A Better Understanding of Missingness in Visual Analytics. 2022. *Human-Data Interaction Workshop IEEE VIS*
 - [W.4] **Tianyi Li**. Solving Mysteries with the Wisdom of Crowds: a Modularized Pipeline and Context Slices. 2019. *Proceedings of the ACM on Human-Computer Interaction*, **CSCW**.
 - [W.3] **Tianyi Li**, Gregorio Convertino, Ranjeet Kumar Tayi, Shima Kazerooni, and Gary Patterson. Adding intelligence to a data security analysis system: recommendation and planning support. *Proceedings of the 24th International Conference on Intelligent User Interfaces: Companion (IUI '19)*. ACM, New York, NY, USA, 69-70.
 - [W.2] **Tianyi Li**, Asmita Shah, Kurt Luther, and Chris North. Crowdsourcing Intelligence Analysis with Context Slices. *CHI Workshop on Sensemaking in a Senseless World, Montreal, Canada, 2018*. (21% acceptance rate for full presentations)
 - [W.1] **Tianyi Li**, Gregorio Convertino, Wenbo Wang, Haley Most, Tristan Zajonc and Yi-Hsun Tsai. HyperTuner: Visual Analytics for Hyperparameter Tuning by Professionals. *IEEE VIS Workshop on Machine Learning from User Interaction for Visualization and Analytics, Berlin, Germany*.
- Patents*
- [P.2] US Patent 16/138684: Hyperparameter tuning using visual analytics in a data science platform
 - [P.1] US Patent 15/948310: Method, apparatus, and computer-readable medium for data protection simulation and optimization in a computer network.

Teaching Experience

Purdue University

- CNIT 37200 **Database Programming** (*Undergraduate Class*)
- CNIT581-048 **Introduction to Interactive Systems and Web Development** (*Graduate Class*)

Loyola University Chicago

- COMP 163 **Discrete Structures** (*Undergraduate Class, remote*)
- COMP 141 **Introduction to Computing Tools and Techniques** (*Undergraduate Class, remote*)

Virginia Tech

- CS 5734 **Social Computing & CSCW** (*Graduate Class*)
Fall 2019, Guest Lecture

Key topics: design, implementation, use, and analysis of computing systems concerned with multiple users and stakeholders.

CS 5724 Models and Theories of HCI (Graduate Class)

Fall 2019, Graduate Teaching Assistant (lecturing, project coaching, office hours and grading)

Key topics: classical human-factors, classical cognitivism/information processing, a phenomenologically-situated paradigm

CS 4824 Machine Learning (Undergraduate Class)

Spring 2020, Graduate Teaching Assistant (project coaching, office hours and grading)

Key topics: classification basics, decision trees, naive bayes, bayesian networks, and knn, logistic regression, artificial neural networks, support vector machines, ensemble learning, class imbalance, dimensionality reduction, clustering, anomaly detection, generative modeling

CS 4634 Design Of Information (Undergraduate Class)

Fall 2019, Graduate Teaching Assistant (lecturing, project coaching, office hours and grading)

Key topics: design-centered approach, audience-driven design, develop requirements through information architecture principles and methods, systems of systems.

CS 3744 Introduction to GUI Programming and Graphics (Undergraduate Class)

Fall 2018, Graduate Teaching Assistant (project coaching, office hours and grading)

Key topics: HCI design, HCI evaluation, web standards, HTML, CSS, frameworks, responsive design, JavaScript, DOM, event handling, jQuery, Model-view-controller, Apache, PHP, sessions, cookies, Ajax, XML, JSON, MySQL / MariaDB, Crowdsourcing, activity feeds, user analytics, visualization, D3.js

CS 3654 Introductory Data Analytics and Visualization (Undergraduate Class)

Fall 2019, Guest Lecture

Key topics: basic principles and techniques in data analytics; methods for the collection of, storing, accessing, and manipulating standard-size and large datasets; data visualization; and identifying sources of bias.

CS 1044 Introduction to Programming in C (Undergraduate Class)

Fall 2015, Graduate Teaching Assistant (project coaching, office hours and grading)

Key topics: structured data, statement sequencing, logic control, input/output, and functions.

Student Mentoring

2019-2020 Yasmine Belghith (Master's, CS, Virginia Tech)

Co-authored short paper at IEEE VIS 2020 (CrowdTrace).

2018-2019 Chandler J. Manns (Undergraduate, CS, Virginia Tech)

Poster presentation at VTURCS symposium. Co-authored full paper in CSCW 2019.

2017-2018 Asmita Shah (Undergraduate, CS, Virginia Tech, 2017-2018)

Poster presentation at VTURCS symposium. Co-authored workshop paper in CHI 2018.

2016 Fall Ria Sarkar (Undergraduate, CS, Virginia Tech)

Assisted with data analysis.

2016 Spring Chris Lai (Undergraduate, CS, Virginia Tech)

Assisted with Connect the Dots system back-end development and debugging.

2015 Fall Edward McEnrue (Undergraduate, CS, Virginia Tech)

Assisted with Connect the Dots system front-end development and debugging.

2015 Fall Jazmine Zurita (Undergraduate, CS, Virginia Tech)

Assisted with Connect the Dots system user interface design.

Awards and Honors

- 2019 Pratt Fellowship, Virginia Tech - \$1000
- 2019 CSCW 2019 Student Volunteer Travel Fund - \$800 (approx.)
- 2019 CSCW 2019 Doctoral Consortium Travel Fund - \$1500 (approx.)
- 2019 IUI 2019 ACM SIGAI Student Travel Award - \$800
- 2018-2019 Graduate Student Assembly (GSA) Travel Award, Virginia Tech - \$800
- 2018-2019 Center for Human-Computer Interaction (CHCI) Travel Award, Virginia Tech - \$1200
- 2018-2019 Computer Science Department Travel Award, Virginia Tech - \$1800
- 2017 CRA-W Grad Cohort Travel Fund - \$1000 (approx.)
- 2013 ACM programming contest (Hong Kong Regional) 3rd Place (Group)
- 2013-2014 C.V. Starr Scholarships (University of Hong Kong)

Professional Activities

- 2021 Poster & Demo Co-Chair for ACM IUI 2021
- 2020 Program Committee for the 14th ACM Recommender Systems Conference (RecSys 2020)
- 2020 Poster & Demo Co-Chair for ACM IUI 2020
- 2019 Student Volunteer at CSCW 2019
- 2019 Program Committee for the 13th ACM Recommender Systems Conference (RecSys 2019)
- 2019 Student Volunteer at IUI 2019
- 2019 Invited talk at NCWIT Aspirations in Computing (AiC)
- 2019 Associate Chair on the Program Committee for the ACM CHI Conference on Human Factors in Computing Systems (CHI) 2019 Late Breaking Work (LBW)
- 2019 Poster presentation *Algorithms That Make You Think, Fourth Annual Virginia Tech Workshop on the Future of Human-Computer Interaction*
- 2018 Poster presentation *Designing Socio-Technical Systems of Truth, Third Annual Virginia Tech Workshop on the Future of Human-Computer Interaction*
- 2017 Poster presentation at CRA-W Grad Cohort Workshop 2017 (Washington, DC)
- 2016-2018 Demo and poster presentation at ICAT (Institute for Creativity, Arts, and Technology) Day
- 2016-2018 Poster presentation and lab tours at graduate recruiting weeks at Virginia Tech
- 2013-2015 Volunteer lecturer of Koding Kingdom (Hong Kong)
- 2013 Research Assistant at HKU Li Ka Shing Faculty of Medicine
- Reviewer TVCG 2021
- CSCW 2021, 2020, 2019, 2018
- CHI 2021, 2019, 2018
- RecSys 2020, 2019, 2018
- Creativity & Cognition 2019
- IUI 2019
- VIS 2019, 2018