Ruanqianqian (Lisa) Huang

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RESEARCH INTERESTS

Programming language techniques, human-computer interaction, programmer cognition

EDUCATION

University of California San Diego, La Jolla, CA   2020 - Present
Ph.D. Student in Computer Science
Advisor: Sorin Lerner

Wellesley College, Wellesley, MA   2016 - 2020
B.A. (summa cum laude) in Computer Science (Honors) & Cognitive and Linguistic Sciences
Thesis: The Design and Implementation of Venbrace, a Text Language for App Inventor

TECHNICAL SKILLS

Significant experience with:
Programming Languages: Python, TypeScript, JavaScript, Java
Tools/Libraries: Node.JS, pandas, matplotlib, ggplot2, dplyr, ANTLR4

Moderate experience with:
Programming Languages: R, Scala, Haskell, MySQL, C, Racket
Tools/Libraries: D3.js, PyDruid, Flask, Scikit-learn, NLTK

RESEARCH EXPERIENCE

Graduate Student Researcher, **Programming Systems Group, UC San Diego**   2020.8 - Present
Advisor: Sorin Lerner | *Skills:* Live Programming, Program Synthesis, Large-scale User Studies, Qualitative Analysis
  * Developing and evaluating stand-alone as well as Visual Studio Code-based programming tools for boosting programmer productivity and intuition. [t.4]
  * Revealed that college students considered a Live Programming tool preferable and more helpful for learning through a quarter-long study (N=237) in a naturally occurring introductory computer science class. [c.1]

Student Researcher, **Department of Computer Science, Wellesley College** [bt.1, w.1, p.2, t.2-3]   2019.1 - 2020.7
Advisor: Franklyn Turbak | *Skills*: Programming Language Design, Quantitative Analysis of User Interactions
  * Designed and developed Venbrace, a text language for App Inventor's visual coding blocks.
  * Implemented an HTML-embeddable, syntax highlighted editor for Venbrace that repairs malformed code.
  * Designed and executed online controlled experiments to evaluate the syntax of Venbrace. (Study Overview)

Undergraduate Research Assistant, **HCI Lab, Wellesley College** [p.1, t.1]   2018.1 - 2018.10
Advisors: Panagiotis Metaxas and Catherine Delcourt | *Skills*: Data Visualization, Iterative Design
  * Implemented an interactive visualization for TwitterTrails, a platform for Tweet trustworthiness assessment.
  * Developed data cleaning and analysis scripts for TwitterTrails' database.

RESEARCH ARTIFACTS

Ruanqianqian Huang, Kasra Ferdowsifard, Ana Selvaraj, Adalbert Gerald Soosai Raj, and Sorin Lerner. Impact of Live Programming on Student Learning in a CS1 Course. In *Proceedings of the 53rd ACM Technical Symposium on Computer Science Education (SIGCSE '22)*, Providence, RI, USA, 2022. (accepted)   [c.1]

Ruanqianqian Huang. 2020. *The Design and Implementation of Venbrace, a Text Language for App Inventor.* Bachelor's thesis. Wellesley College.   [bt.1]

Ruanqianqian Huang and Franklyn Turbak. A Design for Bidirectional Conversion between Blocks and Text for App Inventor. In *2019 IEEE Blocks and Beyond Workshop (B&B)*, Memphis, TN, USA, 2019, pp. 87-89.   [w.1]

Ruanqianqian Huang and Franklyn Turbak. Bidirectional Conversion between Blocks and Text for App Inventor. Poster at *MIT App Inventor Summit*, Cambridge, MA, 2019.   [p.2]

Ruanqianqian Huang, Beryce Garcia, Catherine Delcourt, Panagiotis Metaxas, and Orit Shaer. Interactive Visualizations and Credibility Evaluations of News Stories on TwitterTrails: A User-Centered Approach. Poster at *Wellesley College Summer Research Program*, Wellesley, MA, 2018. [p.1]

TALKS

Programming with Live Programming — Apr. 2021 [t.4]
Programming Systems Group, UC San Diego, La Jolla, CA

The Design and Implementation of Venbrace, a Text Language for App Inventor — May 2020 [t.3]
App Inventor Team, Massachusetts Institute of Technology, Cambridge, MA

Bidirectional Conversion between Blocks and Text for App Inventor — Aug. 2019 [t.2]
MIT App Inventor Summit, Cambridge, MA

Interactive Visualizations and Credibility Evaluations of News Stories on TwitterTrails — Aug. 2018 [t.1]
Wellesley College Summer Research Program, Wellesley, MA

INDUSTRY EXPERIENCE

Data Analysis Intern, **Cloud Infrastructure, Apple Inc.,** Cupertino, CA — 2019.5 - 2019.8
  * Forecast future fleet changes to optimize hardware resource allocation with 88.38% accuracy.
  * Automated a recurring manual report for Finance by improving the API for search queries.

Software Engineering Intern, **NLP Lab, Avatar Works,** Xiamen, Fujian, China — 2017.6 - 2017.7
  * Assisted with chat bot development by processing and analyzing Chinese textual data using NLTK.

TEACHING EXPERIENCE

Teaching Assistant, **Graduate Programming Languages, UCSD Computer Science & Engineering** — Fall 2021
  * Assisting Professor Ranjit Jhala in grading and holding office hours for 200 students.

Tutor, **Principles of Programming Languages, Wellesley College** — Fall 2019
  * Moderated discussions and helped students debug their homework assignments in office hours.

Tutor, **Data Structures, Wellesley College** — Spring 2018, Fall 2018
  * Moderated discussions and helped students debug their homework assignments in office hours.
  * Delivered individual tutoring sessions on a per request basis.
  * Assisted instructors in grading homework assignments.

HONORS

Student Scholarship for PLMW, POPL 2021 — 2021
Trustee Scholar, Wellesley College — 2020
Academic Achievement Award in Computer Science, Wellesley College — 2020
Sigma Xi Honors Research Society, Wellesley College — 2020
Jerome A. Schiff Fellowship, Wellesley College — 2019
Phi Beta Kappa Honor Society (elected as a junior), Wellesley College — 2019
Wellesley College Science Center Research Award — 2018
Wellesley College Music Department Sandra Wieland Howe Scholarship — 2017

SERVICE

Member of DEI Fellowship Committee, **PhD Admissions Student Committee, UCSD CSE** — 2021.1 - 2021.2
Executive Board Member, **Wellesley College Chamber Music Society** — 2017.9 - 2020.5
Club Facilitator and TA, **Girls Who Code Club (Wellesley, MA)** — 2017.9 - 2017.12
Mentor, **Harvard PBHA Chinatown Teen** — 2016.9 - 2017.5