

# Ruanqianqian (Lisa) Huang

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## RESEARCH INTERESTS

Programming language techniques, human-computer interaction, programmer cognition

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## 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

*Committee:* Franklyn Turbak, Eni Mustafaraj, Catherine Grevet Delcourt

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## 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

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## 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.4-5]
- \* 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:* Domain-Specific 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.
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## 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. To appear in *Proceedings of the 53rd ACM Technical Symposium on Computer Science Education (SIGCSE '22)*, Providence, RI, USA, 2022. [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<sup>ε</sup>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. [\[p.1\]](#)

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## TALKS

**Live Front-End Event Handling** Nov. 2021 [t.5]  
 Programming Systems Group, UC San Diego, La Jolla, CA

**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

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## 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.

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## 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.

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## 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

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## SERVICE

Mentor, **Early Research Scholars Program, UCSD CSE** 2021.9 - Present

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