Ruanqianqian (Lisa) Huang

UX researcher with design and engineering experience in programming systems, education, and GenAI.

CONTACT Email: r6huang@ucsd.edu || Website: rlisahuang.com

EDUCATION

University of California San Diego, La Jolla, CA, USA — Aug. 2020 - Dec. 2025 (exp.)
Ph.D. in Computer Science (Advisor: Sorin Lerner)
M.S. in Computer Science

Wellesley College, Wellesley, MA, USA — Aug. 2016 - May 2020
B.A. (summa cum laude) in Computer Science (Honors) and Cognitive & Linguistic Sciences

WORK EXPERIENCE

University of California San Diego — La Jolla, CA
Graduate Student Researcher (*Supervisor: Prof. Sorin Lerner*) — Aug. 2020 - Present

- Designing and evaluating interface advances for computational notebooks.
- Designing and evaluating AI assistants for programming education.
- Designed and evaluated programming tools for GUI dev, human-AI interaction, and education.
- Investigated computational notebook usage among scientists via field observations.
- Investigated debugging in various programming paradigms via contextual inquiries.

Apple Inc. — Pittsburgh, PA
HCI Research Intern, AI/ML (*Supervisor: Dr. Mary Beth Kery*) — Apr. 2023 - Sep. 2023

- Investigated how novices approach machine learning via field observations and interviews.
- Developed novel interaction techniques for novice-oriented machine learning.

Microsoft Research — Redmond, WA
Research Intern, RiSE (*Supervisor: Dr. Nikolaj Bjørner*) — Jun. 2022 - Sep. 2022

- Created design guidelines for logic modeling education tools via participatory design.
- Developed Z3Guide, a 100% client-side web environment for the Z3 theorem prover.
- Organized an online Z3 learning workshop using Z3Guide (N=112).

Apple Inc. — Cupertino, CA
Data Analysis Intern, Cloud Infrastructure (*Supervisor: Benjamin Wu*) — May 2019 - Aug. 2019

- 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.

SKILLS

Research Methods • Interview • Survey • Contextual Inquiry • Field Study • Grounded Theory • Software Usability Testing • Statistical Analysis • Thematic Analysis • Software Instrumentation

Programming Languages & Tools • TypeScript • JavaScript • HTML/CSS • Python • Node.js • React • LaTeX • Java • R • Haskell • Scala • C • GitHub & Git • CI/CD

Design & Arts • Figma • Miro • Sketch • Adobe Premiere Pro • Adobe Photoshop

Domain Knowledge • Parsing • Compiler Design • Program Analysis • Domain-Specific Languages • Time Series Forecasting

SELECTED PUBLICATIONS

- **Ruanqianqian (Lisa) Huang**, Savitha Ravi, Michael He, Boyu Tian, Sorin Lerner, and Michael Coblenz. How Scientists Use Jupyter Notebooks: Goals, Quality Attributes, and Opportunities. In *Proceedings of the IEEE/ACM 47th International Conference on Software Engineering (ICSE '25)*, Ottawa, Canada, 2025.
- **Ruanqianqian (Lisa) Huang**, Philip J. Guo, and Sorin Lerner. Unfold: Enabling Live Programming for Debugging GUI Applications. In *IEEE Symposium on Visual Languages and Human-Centric Computing (VL/HCC)*. 2024.
- **Ruanqianqian (Lisa) Huang**[†], Kasra Ferdowsi[†], Michael B. James, Nadia Polikarpova, and Sorin Lerner. Validating AI-Generated Code with Live Programming. In *CHI Conference on Human Factors in Computing Systems*. 2024. ([†]Co-first authors)
- **Ruanqianqian (Lisa) Huang**, Kasra Ferdowsi, Ana Selvaraj, Adalbert Gerald Soosai Raj, and Sorin Lerner. Investigating the Impact of Using a Live Programming Environment in a CS1 Course. In *ACM Technical Symposium on Computer Science Education (SIGCSE TS)*. 2022.

Teaching

University of California San Diego

- **Instructor**, Data Structures and Object-Oriented Design (N=45) — Summer 2024
- **Instructor**, Intro to CS Research (N=53) — Fall 2023
- **Teaching Assistant**, Intro to Programming in Python (N=495) — Fall 2024
- **Teaching Assistant**, LLMs, Programming, and HCI (N=34) — Spring 2024
- **Teaching Assistant**, Intro to Programming in Python (N=601) — Fall 2022
- **Teaching Assistant**, Graduate Programming Languages (N=205) — Fall 2021
- **Mentor TA**, Teaching Methods in Computer Science (N=45) — Spring 2025

Wellesley College

- **Teaching Assistant**, Principles of Programming Languages — Fall 2019
- **Teaching Assistant**, Data Structures — Spring & Fall 2018

Selected Awards

- CSE Award for Excellence in Teaching (awarded to 1 PhD student), UCSD — 2024
- 2024 Summer Graduate Teaching Scholars, UCSD — 2023
- Trustee Scholar (1 of 4 out of 600 graduates), Wellesley College — 2020
- Academic Achievement Award (awarded to 1 graduating CS major), Wellesley College — 2020

Selected Professional Service

- Invited Speaker: PLMW@SPLASH (2024)
- Program Committee: LIVE Workshop (2024, 2025), SIGCSE TS (2024, 2025)
- Artifact Evaluation Committee: <Programming> (2024)
- Reviewer: UIST (2023, 2025), TOCE (2023), CHI (2022-)
- Research Mentor: Arpita Pandey (*Information Foraging in Jupyter Notebooks*), Ilana Shapiro (*Symbolic Music Analysis*), Kaleigh Beachler (*AI for Education*), Michael He & Boyu Tian (*Jupyter Notebook Use in Scientific Computing*), Justin Yao Du & Mandeep Syal & Thanh-Nha Tran (*Live Programming for Unit Testing*)
- Co-President, UCSD Graduate Women in Computing (2023-2024)

References

Sorin Lerner (Thesis Advisor)
Professor and Department Chair
University of California San Diego
Email: lerner@cs.ucsd.edu

Philip J. Guo
Associate Professor
University of California San Diego
Email: pg@ucsd.edu

Michael Coblenz
Assistant Professor
University of California San Diego
Email: mcoblenz@ucsd.edu

James D. Hollan
Distinguished Professor
University of California San Diego
Email: hollan@ucsd.edu

Nikolaj Bjørner
Partner Researcher
Microsoft
Email: nbjorner@microsoft.com

Mary Beth Kery
Research Scientist
Apple Inc.
Email: mkery@apple.com