RUANQIANQIAN HUANG

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EDUCATION

Wellesley College *Expected Graduation May 2020*

Candidate for Bachelor of Arts Cumulative GPA: 3.94

Majors: Computer Science (Honors) and Cognitive & Linguistic Sciences

RESEARCH ARTIFACTS

R. Huang. The Design and Implementation of Venbrace, a Text Language for App Inventor. Bachelor's thesis [unpublished], Wellesley College, Wellesley, MA, May 2020.

R. Huang and F. Turbak, "A Design for Bidirectional Conversion between Blocks and Text for App Inventor," *2019 IEEE Blocks and Beyond Workshop (B&B)*, Memphis, TN, USA, 2019, pp. 87-89, doi: 10.1109/BB48857.2019.8941197.

R. Huang and F. Turbak,. "Bidirectional Conversion between Blocks and Text for App Inventor," poster presentation at the *MIT App Inventor Summit*, Cambridge, MA, Aug. 2019.

R. Huang*, B. Garcia*, C. Delcourt, P. Metaxas, and O. Shaer, "Interactive Visualizations and Credibility Evaluations of News Stories on TwitterTrails: A User-Centered Approach," poster presentation at *Wellesley College Summer Research Program*, Wellesley, MA, Aug. 2018.

HONORS

Sigma Xi *May 2020*
Wellesley College Jerome A. Schiff Fellowship *Oct. 2019*
Phi Beta Kappa *Aug. 2019*
Wellesley College Science Center Research Award *Jun. 2018*
Wellesley College Music Department Sandra Wieland Howe Scholarship *Sep. 2017*

RESEARCH EXPERIENCE

Wellesley College Department of Computer Science *Jan. 2019 - Present*

Student Researcher - Advised by Prof. Franklyn Turbak

- Design and develop *Venbrace*, a textual syntax that represents MIT App Inventor coding blocks.
- Implement an HTML-embeddable, syntax highlighted *Venbrace* editor that tracks user behavior.
- Design and execute studies to evaluate the syntax of *Venbrace*.
- Conduct extensive literature review of previous efforts in visual programming languages, dual-mode programming systems, and evidence-based programming language design.

Wellesley College Human-Computer Interaction Laboratory *Jan. 2018 - Oct. 2018*

Research Assistant - Advised by Profs. Panagiotis Metaxas and Catherine Delcourt

- Implemented and maintained a user-centered interactive visualization for *TwitterTrails* using D3.js and HTML/CSS.
- Developed scripts that read, purify, and analyze data from *TwitterTrails*'s database.

MIT Sloan School of Management *Sep. 2017 - Dec. 2017*

Undergraduate Research Assistant - Big Data Research on 9-1-1 Emergency Coordination

- Developed scripts that collect and purify 9-1-1 call data from a variety of sources using Python.
- Analyzed and visualized the utilization of 9-1-1 call data trends using Excel and Python.

WORK EXPERIENCE

Apple Inc., Cupertino, CA *May 2019 - Aug. 2019*
Data Analysis Intern - Apple Cloud Infrastructure

- 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.

Avatar Works, Xiamen, Fujian, China *Jun. 2017 - Jul. 2017*
Software Engineering Intern

- Assisted chat bot development by processing and analyzing Chinese textual data using NLTK.

TEACHING EXPERIENCE & SERVICES

Teaching Assistant, CS 251: Principles of Programming Languages *Sep. 2019 - Present*
Teaching Assistant, CS 230: Data Structures *Jan. 2018 - Dec. 2018*
Club Facilitator and TA, Girls Who Code (Wellesley club) *Sep. 2017 - Dec. 2017*
Executive Board Member, Wellesley College Chamber Music Society *Sep. 2017 - Present*
Flutist and Baroque Flutist, Wellesley College Chamber Music Society *Sep. 2016 - Present*
Mentor, Harvard PBHA Chinatown Teen *Sep. 2016 - May 2017*

CLASS PROJECTS

Decaf Compiler, *Java* (MIT 6.035: Computer Language Engineering) *Sep. 2019 - Dec. 2019*

- A Decaf-to-x64-assembly compiler, compilation speed-up by 10.9% with optimizations.

Platform 106, *Python/MySQL* (CS 304: Databases with Web Interfaces) *Feb. 2019 - May 2019*

- A centralized information sharing platform for the Wellesley College community that incorporates Flask, JavaScript & jQuery, and HTML/CSS.

Yelp Review Predictor, *Python* (CS 232: Artificial Intelligence) *Mar. 2018 - May 2018*

- A predictor of the usefulness of Yelp reviews with 61.6% accuracy using NLTK.

Catify, *Java* (CS 230: Data Structures) *Nov. 2017 - Dec. 2017*

- A memory game in which the player, given a grid of faced-down cat pictures, must find all the pairs of identical pictures within the fewest number of clicks possible.

OTHER TALKS

"Breaking the Brotopia: Demystifying Tech Internships." Presentation (Panelist) at *Wellesley College Tanner Conference*, Wellesley, MA, Oct. 2019.

"Information Credibility, Echo Chambers and Social Capital: Social Computing and Our Lives." Presentation at *Wellesley College Tanner Conference*, Wellesley, MA, Oct. 2018.

"Artificial Intelligence: From Fiction to Reality." Presentation at *Wellesley College Ruhlman Conference*, Wellesley, MA, May 2018.

"Flutes on Fire: Passion and Virtuosity in 20^{th}-Century Flute Quartets." Panel Presentation and Performance (Panelist) at *Wellesley College Ruhlman Conference*, Wellesley, MA, May 2018.

SKILLS

Development: Java, Python, JavaScript, HTML/CSS, C, Assembly, Racket, Standard ML, Photoshop
Frameworks: PyDruid, Flask, Scikit-learn, Plotly, NLTK, jQuery, ANTLR, D3.js
Scientific Computation: R, LaTeX, MySQL
Languages: Mandarin (Native) ⋄ English, Cantonese (Fluent) ⋄ French (Intermediate)