Julie Wang

BROWN UNIVERSITY '21 • COMPUTER SCIENCE SC.B.

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Skills

PROGRAMMING

Java, Python, C, C#, C++, Objective C, JavaScript, React, React Native, TypeScript, Alloy

DESIGN

InDesign, Photoshop, Illustrator, XD, Figma

OTHERS

SQL, HTML/CSS

Coursework

Software Engineering, UI/UX, Computer Graphics, 2D Game Engines, Machine Learning, Logic for Systems, Virtual Reality, Computer Systems, Programming Languages, Statistical Inference

GPA: 4.0

Interests

Breadmaking, typography, user experience, education, airports, pixel art, game design, riddles, LED screens, and trying burgers across the world.

Work Experience

SOFTWARE ENGINEERING INTERN

Facebook • Jun 2020 — Aug 2020

- Intern for the Augmented Reality Experiences team, and developed high-volume iOS software using Objective C, C++, and React Native
- Integrated workstreams from image recognition, feature detection, and tracking services
- Communicated with product designers and implemented front-end user interfaces

HEAD TEACHING ASSISTANT

Brown CS Department • Aug 2018 — Present

- Led large teams of undergraduate TAs for Object-Oriented Programming, Discrete Mathematics, and 2D Game Engines
- Coordinated overarching course logistics, grading meetings, and student communications
- Developed new homework assignments, contributed towards a new final project, and gave input on improving and restructuring the current curriculum
- Held 200+ hours of TA hours, made 6000+ Piazza contributions, and mentored two sections

UNDERGRADUATE RESEARCH DEVELOPER

Brown University Graphics Lab • Feb 2018 — Sep 2019

- Developed pen & touch computing software in C#, React, and TypeScript
- Worked with Professor Andries van Dam on the "Dash" project, focused on organic note-taking
- Completely redesigned the application's user interface
- Implemented other features such as export for publishing and freeform linking

GLOBAL PROGRAM COORDINATOR

World Scholar's Cup • Jun 2016 — Aug 2019

- Senior staff member for an educational program, which holds events in over 70 countries
- Led setup and logistical coordination for over 50 international events
- Designed print materials such as flyers, program booklets, schedules, and maps
- Built tools to automatically generate shipping lists, organize rosters, and validate scores

Past Projects

MYSTERY DUNGEON

Java & JavaScript • May 2019

- Helper tool for the narrative game Dungeons and Dragons.
- Graphical random dungeon generator with options for size, difficulty, and theme.
- Enhanced REPL-like interface for combat management and quick information lookup.
- Scraped data using Beautiful Soup, and saved with SQLite.
- Playtested and designed solutions with real players in mind.

WALUIGI TIME

C++ & GLSL • Dec 2018

- Made for the Vive system.
- A Waluigi-themed minigame created in virtual reality, in which the player navigates through a field throwing tennis balls at targets.
- Built an algorithm for procedurally generating a scene upon launch, using poisson-disc sampling.
- Wrote all graphics and physics components from scratch.

DRINKS AND DRAGONS

Alloy & Forge • May 2020

- Modeled epistemological puzzles using first-order logic (e.g. the dragon problem).
- Built knowledge and evidence graphs that depict each individual's list of possible worlds, which update through events and state transitions.
- Abstracted the concept of public vs. private knowledge.
- Verified the correctness of traditional solutions.

2D GAME ENGINE

Java • Sep 2019

- A backend for game development made entirely from scratch.
- Implements the entity-component system design pattern to quickly build and manage game objects.
- Uses a responsive UI toolkit.
- Designed to be extensible and allow multiple, diverse games to be created with it, from roguelike dungeon crawlers to complex platformers.