Ryan Yuki Huang

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EDUCATION

Brown University Providence, RI | Expected Graduation: 2025

Bachelor of Science in Computer Science GPA: 4.0/4.0

- **Relevant Courses:** Data Structures and Algorithms, Intro to Object-Oriented Programming, Discrete Structures and Probability, Multivariable Calculus, Statistical Inference I, Linear Algebra, Intro to Software Engineering (current), Design and Analysis of Algorithms (current), Artificial Intelligence (current)
- **Honors/Awards:** PLME SRA Research Award (2023), Regeneron STS Scholar (2021)
- **Leadership Positions:** Software Engineering Lead of Brown Applied Computing Club, PLME Program Student

SKILLS & INTERESTS

Languages: Python, Java, HTML/CSS, R, SQL, MATLAB, familiar with: C/C++, Racket, Dart
Technologies: Git, ReactJS, Jupyter Notebook/Google Colab, scikit-learn, Flutter

EXPERIENCE

Zymolo, *Software Engineering Intern @ Biotech Startup* San Diego, CA | May 2023 – Aug 2023

- Spearheaded the design and development of the company website for a user-friendly responsive UI| **ReactJS, NodeJS**
- Developed an automated service to sort/organize hundreds of gene sequence data in the company database, decreasing typical sorting and access times by 52% | **Python**

Brown University ML Research Lab*, Undergraduate Researcher @ Crawford Lab* Providence, RI | Aug 2022 – Present

- Developed a framework to classify breast cancer subtypes using Topological Data Analysis and Machine Learning on H&E stain data, achieving a 5% accuracy increase over previous classification methods
- Utilized a Deep Gaussian Process to create an attention heatmap for aiding pathologists in diagnosis | **Python, R**
- Scripted a graph-based algorithm to generate alpha shapes, resulting in 25% faster runtimes for shape analysis | **R**

San Diego Supercomputer Center, *Machine Learning Intern* San Diego, CA | Jun 2021 – May 2022

- Led my research group of 20 in the lab to create a reader for COVID-19 test strip results by pairing ImageJ color detecting software with trained Object Detection (YOLO v4) | **Python**
- Built an imaging app that used ImageJ+YOLO v4 software in Android Studio to read on COVID-19 testing strips | **Java**
- Published first author and patent impending for software projecting 1.2-fold efficiency in COVID-19 diagnosis

PERSONAL PROJECTS

Options Trading Robot | Python

- Built a trading bot designed for automating trading strategies using the TD Ameritrade API
- Implemented a portfolio object that handles positions in a stock portfolio and calculates risk metrics/profitability
- Created an object to handle indicators, such as the moving average and relative strength index, from prior and current real-time prices in the market

MedChat | Dart, C++ (Flutter)

- Developed front-end and back-end code for a doctor/patient interaction app for easy procedural check-ins in Flutter
- Text, updates, and checklist functionalities were implemented using Firebase
- Conceptualized dynamic front-end design and layout of the app for accessible use by both patients/doctors in Figma
- Currently in-use by the Rhode Island Hospital and Brown Dermatology Department (1,000+ users)

webSnap | ReactJS, TailwindCSS

- Deployed a React application with Vite to generate 1 paragraph summaries of websites online using the OpenAI API
- Made a local JSON storage to save previous links and their respective summaries even after refreshing page
- Used Redux to provide/update components and fetch summary queries from OpenAI's generated text

Pacman | Java, JavaFX

- Recreated Pacman with ghosts using BFS to chase Pacman as scores/positions are updated in real-time
- Used JavaFX as the GUI framework to display background panes and character designs/animation