Ryan Zhao

(425) 647-0941| zhaoryan20@outlook.com | linkedin.com/in/ryanzhao63 | github.com/ryan-zhao313

EDUCATION

Emory University, B.A. Computer Science **May 2024**

- **Relevant Courses:** Data Structures and Algorithms, Database Systems, Artificial Intelligence, Machine Learning, Algorithm Analysis, Operating Systems, Machine Learning Applications

University of Washington Allen School of Computer Science **June 2021**

WORK EXPERIENCE

Software Engineer Intern – Expedia Group **May 2023 – July 2023**

- Reduced waiver processing time from 3-5 days to 1 day through design and deployment of an automated waiver processing tool, saving 16+ hours of weekly manual engineering effort.
- Improved system security with Okta authentication for robust access control, enabling seamless multi-waiver uploads and tracking waiver status via Java-based backend APIs.
- Lowered processing errors by 98% through improved error handling and data validation, significantly boosting operational reliability by addressing user pain points.
- Achieved 93% unit test coverage and documented key design decisions to ensure scalability and streamline future enhancements.

Technologies Used: Java, Typescript, SQL, AWS, Jenkins, Datadog, Jira, Postman

PROJECTS

Mpox Recommender System **March 2024 – May 2024**

- Developed an Artificial Neural Network (ANN) using TensorFlow, achieving 67.6% accuracy for MPox testing recommendations based on symptoms, supporting faster and more consistent testing prioritization.
- Preprocessed a dataset of 25,000 anonymized patient records and implemented a two-hidden-layer ANN with optimized hyperparameters to balance performance and accuracy.
- Simplified user accessibility by creating an intuitive interface for symptom input, ensuring robust error handling for varied user inputs.

Technologies Used: Python, TensorFlow, NumPy, Pandas, Scikit-learn

Brain Tumor Image Detector **January 2024 – May 2024**

- Leveraged a Python-based algorithm for detecting brain tumors in medical scans using OpenCV, applying advanced image processing techniques to improve tumor detection.
- Implemented an image processing pipeline utilizing edge detection and k-means++ clustering to isolate tumor regions within brain scans.
- Conducted validation and testing on large medical imaging datasets to ensure the model's precision across diverse use cases.

Technologies Used: Python, OpenCV, NumPy, Scikit-learn

SwooperMarket **August 2023 – December 2023**

- Designed, developed, and deployed a full-stack marketplace app to address limitations in existing solutions like Emory's Buy/Sell/Giveaway GroupMe, enabling streamlined transactions and interactions within the university community.
- Strengthened user retention and engagement by 40% through enhancements to user profiles, including customizable fields and avatars, addressing key user needs for personalization.
- Attracted 50 new users by showcasing the app to 300+ Emory students and faculty (17% conversion rate), leveraging direct feedback to refine features and improve the user experience.

Technologies Used: React, Next.js, Vercel, PostgreSQL

TECHNICAL QUALIFICATIONS

Languages (Proficient): Python, Java, SQL (MySQL, PostgreSQL)

Languages (Familiar): C, JavaScript, Typescript, Bash, R, HTML, CSS

Tools: React, Git, Node.js, Spring Boot, AWS, TensorFlow, Pandas, NumPy, Postman, REST APIs