Allen Wang

Diamond Bar, CA 91765 | Phone: (909)-859-1536 | E-Mail: allen_wang1@brown.edu | Website: allenw.co

EDUCATION

Brown University, Providence, RI — Expected Graduation: May 2026
Sc.B. in Applied Mathematics-Computer Science — *GPA: 4.00/4.00*
Relevant Courses: Software Engineering, User Interfaces and Experience, Computer Systems, Database Management Systems, Deep Learning, Machine Learning, Data Structures and Algorithms, Discrete Structures, Linear Algebra, Multivariable Calculus
Skills: React, JavaScript, TypeScript, HTML/CSS, Node.js, REST/GraphQL, Go, SQL, NoSQL, Python, Java, C, C++, Git, Docker

EXPERIENCE

Wingspans (EdTech startup with 50,000 users for 30+ schools)**,** Software Engineer Intern — Providence, RI | May 2023 – Present
Gatsby/Node.js/React/Typescript/CSS/Firebase/Algolia/Cosmic/

- Fully owned and launched gamification feature, directly resulting in a 71% boost in user engagement via point interactions
- Collaborated on strategic site enhancements that significantly contributed to a 5,000 user increase
- Engineered adaptive feedback loop enabling users to like/dislike careers suggestions to refine recommendations
- Developed resume optimization tool using Large Language Models/Transformers to tailor resumes to specific job postings

Full Stack at Brown, Project Manager/Software Developer — Providence, RI | January 2023 – Present
Next.js/React/Typescript/MUI

- Created internal tool (Here) for Brown University classes to streamline assignment of lab/recitation times; team of 4
- Developed custom multi-page frontend interface using React (MUI library) and TypeScript that allows professors to conveniently assign distinct lab times and grades for classes up to 600 people

Brown Data Science Institute Lab, Research Assistant — Providence, RI | March 2023 – August 2023
Python/Pandas/OpenAI

- Worked in team of 6 to investigate biases that LLMs can have when solving automated decision tasks through OpenAI API
- Employed prompt engineering techniques on tabular US Census data to identify optimal prompts for accurate predictions

University of Southern California, Research Assistant — Los Angeles, CA | June 2021 – July 2021
Python/XGBoost Classifier/PyQt5

- Worked with PhD student in Professor Mataric's lab to help children with ASD avoid distractions and learn more effectively
- Modularized engagement detection machine learning model (XGBoost Classifier) to improve code readability
- Achieved ~90% accuracy (AUROC) for post hoc binary classification of engagement

PROJECTS

SpotiDuo, *TypeScript/Java/OAuth/Spark/Azure/Spotify* — November 2023 – December 2023

- Developed music-based language learning app rooted in research highlighting music's role in boosting retention, featuring karaoke-style lyric input alongside real-time translations for over 150 native dialects (supported through Azure)
- Crafted tiered difficulty system for lyric interaction and implemented Levenshtein algorithm for accuracy assessment
- Delivered personalized song recommendations based on user's initial selection, utilizing 20+ attributes (energy, mood, etc)
- Integrated Spotify OAuth (PKCE Flow) with secure cookie storage to maintain user session persistence over multiple logins

Interactive Maps Data Visualization, *TypeScript/Java/Spark/JUnit/Jest/Playwright* — August 2023 – November 2023

- Integrated map (Mapbox) with GeoJSON data overlay, allowing users to interact/visualize historical redlining data
- Executed external API interactions to provide users with real-time statistics relevant to their geographic selections on map
- Developed web API server (optimized with caching), enabling users to query/view relevant data in CSV/JSON formats
- Applied comprehensive testing using TypeScript/Java (unit, integration, property, fuzz) to ensure secure/reliable performance

Database Indexing, *Go/B+Tree/Hash Table/Extendible Hashing* — October 2023

- Developed efficient database indexing using B+Tree that allows for insertion, splitting, and traversal operations
- Constructed an extendible hashing system for rapid data lookups, ensuring smooth bucket overflow management, dynamic table extensions, and optimal space utilization

Caching I/O, *C/C++* — March 2023

- Developed single-slot DRAM file I/O cache, achieving 1.24x speed increase over standard library caching functions
- Optimized cache by employing prefetching strategies to reduce latency and enhance data access efficiency

ORGANIZATIONS

Brown Technology Consulting Group, *Consultant* — Providence, RI | October 2022 – May 2023

- Created technical outline on using AI to web scrape clothing sizes; built financial models on how to sell/price clothing data

Brown Young Entrepreneurs of Providence, *Student Mentor* — Providence, RI | September 2022 – December 2022

- Guided 4 students in creating gamified productivity app startup; value proposition, prototyping (Figma), pitching, fundraising