

Education

University of California, San Diego

San Diego, CA

M.S. IN COMPUTER ENGINEERING (MACHINE LEARNING AND DATA SCIENCE)

Sept 2023 - June 2025

B.S. IN COMPUTER ENGINEERING

Sept 2020 - June 2023

- **3.8 GPA** | Member of Honor Societies **Tau Beta Pi (TBP)** and **IEEE - Eta Kappa Nu (HKN)**
- Relevant Coursework: Advanced Data Structures and Algorithms, Machine Learning, Server Architecture, Web Development, Databases, Cryptography

Work Experience

Tesla

Palo Alto, CA

SOFTWARE ENGINEER INTERN

Jan 2024 - Present

- Optimized Tesla's vehicle diagnosis software, Toolbox, by improving **SQL** database queries and API endpoints which resulted in a **60% faster page load**.
- Built out 14 web pages using **React.js**, **Redux**, **Typescript**, and **C++** which allowed Service Engineers to execute vehicle commands in a secure terminal.
- Migrated 1 large, centralized service into 2 distributed microservices using **Docker** controlled by **Kubernetes**, which increased Tesla's backend efficiency.
- Built a new **Golang** backend which syncs data from 30+ data sources into one centralized S3 bucket, resulting in **30% faster request speed** on Tesla's APIs.

UCSD Mobile Systems Design Lab

San Diego, CA

SOFTWARE DEVELOPER & MACHINE LEARNING RESEARCHER

Jan 2022 - Present

- Developed a **React Native** mobile app that allows patients to record themselves performing physical therapy exercises at home while being given real-time feedback using skeletonized models displayed on the phone using **OpenCV**, **TensorFlow**, **Typescript**, and **C++**.
- Built a robust **Python** backend connected to a **PostgreSQL** database which allows the mobile app to query patient data through protected API endpoints.
- Deployed the platform to **2 physical therapy clinics** and **50+ patients**, with more trials still ongoing.

UCSD Computer Science and Engineering Department

San Diego, CA

TEACHING ASSISTANT

Sept 2021 - Mar 2023

- Helped **1,400+ students** by grading exams, giving constructive feedback with programming assignments, and holding tutoring sessions outside of normal class time in a Data Structures and Algorithms class, teaching **binary search trees**, **linked lists**, **stacks**, **heaps**, **priority queues**, and **hashmaps**.
- Received **100% student approval** rating across **200+ one-on-one sessions**.

Qualcomm

San Diego, CA

SOFTWARE ENGINEER INTERN

June 2023 - Sept 2023

- Optimized the processing of IP log packet processing in the 5G data layer using **C++** for upcoming computer chipsets, **lowering memory usage by 20%**.
- Improved CPU multithreading capabilities by establishing new locks and semaphores which handled race conditions and prevented new runtime crashes.

SOFTWARE ENGINEER INTERN

June 2022 - Sept 2022

- Worked with **8 customers** to develop **2 tools** using **C++**, **C#**, and **XAML** which fully implement and demonstrate **5 new Qualcomm Snapdragon features**.
- Achieved **3rd / 153 competitors** in Qualcomm's annual 5G hackathon through creating Forestshield, an early wildfire detection tool for first responders.

Leadership & Activities

IEEE - Eta Kappa Nu (HKN)

San Diego, CA

SOFTWARE DEVELOPER LEAD — [WEBSITE](#) / [GITHUB](#)

May 2021 - June 2023

- Led a team of **9 software engineers** on the development of a member portal used by **1,000+ HKN honor society members** across UC San Diego.
- Architected a fullstack web application where officers can securely create events for members which are display on a centralized calendar.
- Built the website using **React.js** with **Firebase** to ensure authorized access and the server using **Express.js** which stores event data in a **SQL** database.

FIRST Robotics Competition - Team 5199

San Juan Capistrano, CA

SOFTWARE ENGINEER

Sept 2017 - June 2020

- Leveraged **Python**, **C++**, **ROS** (Robot Operating System), and **OpenCV** to construct a team robot each year in a fast-paced environment.
- Achieved **1st / 56 teams** in the 2019 Los Angeles Regionals and **1st / 42 teams** in the 2019 Ventura Regionals. Competed in the **2019 World Championships**.

Projects

Archiveverse (600,000+ visits / month)

17TB MIIVERSE ARCHIVE — [WEBSITE](#) / [GITHUB](#)

- Created a 17TB archive of Miiverse, Nintendo's discontinued social platform with 8M+ users and 300M+ posts, which generates **600,000+ visits / month**.
- Built the frontend using **React.js** and constructed the backend using **Express.js** and **SQL** with optimized binary tree indexes for millisecond-level searching.
- Cached server responses into the web browser using **Redux**, which resulted in **90% fewer API calls** due to the data not needing to be fetched again.

Where2Be (2,000+ users)

UNIVERSITY EVENTS MOBILE APP — [WEBSITE](#) / [GITHUB](#)

- Developed a **React Native** mobile app which scrapes data across Instagram, Facebook, and Discord and parses them into events for students to join.
- Built a **Fast API** backend written in **Python** integrated with a **Neo4j** database to create an event recommendation system based on student interests.
- Marketed the app to students across UC San Diego, UC Berkeley, USC, and the University of Illinois Urbana-Champaign, resulting in **2,000+ users**.

Technical Skills

Languages: JavaScript / TypeScript, Golang, SQL, C#, XAML, Java, Python, C, C++, HTML, CSS

Frameworks: Docker, Kubernetes, React.js, React Native, Next.js, Fast API, Node.js, Redux, Expo, Neo4j, OpenCV, TensorFlow