Kyle **Wade**

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Education

University of California, San Diego *San Diego, CA*

M.S. in Computer Engineering (Machine Learning and Data Science) *Sept 2023 - March 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 - April 2024*

- Optimized Tesla's vehicle diagnosis software, Toolbox, by improving **SQL** database queries and API endpoints which resulted in **60% faster processing**.
- Created 14 new 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 10+ data sources into one centralized S3 bucket, resulting in **30% faster request speed** on Tesla's APIs.

UC San Diego *San Diego, CA*

Machine Learning Researcher @ Mobile Systems Design Lab *Jan 2022 - Present*

- Developed a **React Native** mobile app that enables 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**, **Mediapipe**, **TensorFlow**, **Typescript**, and **C++**.
- Built a **Python** server which trains an exercise model by accepting a skeleton JSON via an API endpoint, executing k-means clustering, extracting top features, performing principal component analysis, creating a Gaussian mixture model, and pushing the calculated model weights to a **PostgreSQL** database.

Instructional 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 packets in the 5G data layer using **C++** for upcoming computer chipsets, **lowering chipset 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 new features for the Qualcomm Snapdragon computer chip using **C++** with benchmarking tools in **C#** and **XAML**.
- 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 Tech Lead & Board Officer — 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.
- Organized and ran hackathons, ceremonies, and industry recruiting events for hundreds of university students, student organizations, and companies.
- Streamlined new students inducting into the engineering honor society through conducting technical interviews.

Projects

Archiverse (600,000+ visits / month)

17TB Miiverse Archive — Website / GitHub

- Created a complete archive of Miiverse, Nintendo's discontinued social platform which had 8M+ users, 133M+ posts and 216M+ replies, totaling 17TB.
- 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**.

osu! capital (11,000+ users)

Quantitative osu! Stock Market — Website / GitHub

- Created a stock market platform in **Next.js** that models osu! player performance statistics as stock prices which users can invest fake currency into.
- Utilized **Golang** for the REST API, **PostgreSQL** for the database, **Redis** for storing user sessions, **Stripe** for payment processing, **Docker** for running microservices, and **Kubernetes** for container management, lowering operation costs from **$300/mo** to **$15/mo** through migrating towards self-hosting.

Technical Skills

Languages: Python, C, C++, JavaScript, TypeScript, Golang, SQL, C#, XAML, Java, HTML, CSS
Frameworks: Docker, Kubernetes, React.js, React Native, Next.js, Fast API, Node.js, Redux, Expo, Neo4j, OpenCV, TensorFlow