

Mohammed Zaid

mdyasinzaidabir@gmail.com | Lake Elsinore, CA | [linkedin/mohammed-zaid](https://www.linkedin.com/in/mohammed-zaid) | github.com/mzaid03 | 562-417-5854

EDUCATION

University of California, San Diego

June 2026

B.S. - Mathematics & Computer Science

Relevant Coursework: Advanced Data Structures, **Software Engineering**, Supervised **Machine Learning**, Components and **Design Techniques** for Digital Systems, Introduction to Numerical Analysis, Modern Algebra II

WORK & LEADERSHIP EXPERIENCE

UCSD Associated Students

La Jolla, CA

Campus-Wide Senator

April 2025 - Present

- Strategically managed an **\$8 million** operational budget, implementing rigorous oversight processes and developing targeted funding initiatives that efficiently allocated resources across campus priorities.
- Orchestrated management systems for **600+ student organizations**, designing streamlined approval processes and resource allocation protocols that enhanced club operations and campus engagement.

VEX Robotics

Lake Elsinore, CA

Founder & President

June 2021 - July 2022

- **Programmed 1,200+ lines of C** for autonomous object-manipulation, integrating motor control, sensor fusion, and path planning; served as **lead driver in 20+ test sessions**, boosting **task speed by 35%** and **reducing errors by 30%** through iterative debugging, **PID tuning**, and real-time adjustments.
 - Architected the robot's control systems using object-oriented design principles, developed comprehensive technical documentation, including **UML diagrams**, and system architecture specifications.
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PROJECTS - www.mohammedz.com

FIFA Rankings & Political Corruption Analysis | *Pandas, Matplotlib, Statistical Modeling, Data Analysis*

- **Engineered** a robust data science pipeline to analyze FIFA rankings alongside CPI, press freedom, and GDP indicators, employing statistical modeling and **Python-based visualizations** to reveal long-term correlations between political corruption, institutional strength, and patterns of state-sponsored sportswashing in international football tournaments.

IoT Botnet Detection System | *Python, NumPy, Pandas, Scikit-learn, Matplotlib, Seaborn, Machine Learning*

- Built a machine learning pipeline on the **UCI N-BaIoT dataset** (7M+ rows, 115 features, 9 IoT devices, 8 attack types); performed preprocessing by removing **157k+ duplicates**, correcting a **92.1% imbalance**, and applying **Min-Max scaling**. Trained a Decision Tree (depth = 6,500 samples/leaf), achieving 99.96% accuracy, precision, recall, and F1-score on **205k test samples** with only **86 errors**, validated through detailed correlation heatmaps, and strategically positioned for scalable deployment with SVMs.

Islamic Prayer Reminder | *HTML, CSS, JavaScript, Aladhan API, Open-Meteo API, Web UI/UX*

- Developed a location-based Islamic prayer web app using HTML, CSS, and JavaScript, integrating Aladhan and **Open-Meteo APIs** for dynamic Salah times, Hijri dates, and Quranic verses, with animated dhikr titles, interactive Hadith, dark mode, and embedded prayer guides, delivering responsive, accessible, and spiritually enriching real-time functionality.

SyncDocs | *React, TipTap, Node.js, Yjs, WebSockets, HTML, CSS, JSON, TypeScript, npm, Docker, Vite*

- Built a Google Docs-style real-time collaboration app with React, TipTap, Node.js, and Yjs CRDTs, enabling seamless editing for 100+ concurrent users with sub-100ms latency. Implemented Redis-backed presence, version control, dark-mode UI, CI/CD pipelines, and containerized microservices to deliver a scalable, resilient, and globally accessible cloud-native solution.
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TECHNICAL SKILLS

Languages: Java, Python, JavaScript, MATLAB, C, C++ (**Intermediate**)

Libraries & Tools: React, Tailwind CSS, Next.js, Git, Node.js, Firebase, Figma, HTML, CSS, Pandas, Matplotlib

Managerial Skills: Project management, team leadership, workflow optimization, strategic thinking, user-centered design, accessibility, quality assurance, version control, data integrity, cross-functional collaboration