Mohammed Y. Zaid

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EDUCATION

University of California, San Diego — **La Jolla, California**
B.S. - Mathematics & Computer Science — *Expected Graduation, June 2026*
Relevant Coursework: Advanced Data Structures, Software Engineering, Supervised Machine Learning, Components and Design Techniques for Digital Systems, Foundations in Numerical Analysis, Discrete Mathematics

EXPERIENCE

UCSD Associated Students — **La Jolla, CA**
Campus-Wide Senator — *April 2025 - Present*
- Managed **$8M** operational budget with rigorous oversight and efficient resource optimization.
- Developed innovative targeted funding initiatives to support key campus priorities effectively.
- Directed comprehensive systems for **600+** student organizations with streamlined approval protocols.
- Enhanced overall club operations and student engagement through efficient resource allocation by **90%**.

VEX Robotics — **Lake Elsinore, CA**
Founder & President — *June 2021 - July 2022*
- Formed an organization of **100+** members and served as a mentor, motivator, and team-builder.
- Programmed **1,200+** lines of C for autonomous object manipulation, integrating precise motor control.
- Applied advanced sensor fusion and path planning techniques to optimize robotic task execution.
- Served as lead driver in **20+** test sessions, boosting speed by **50%** and reducing errors by **30%**.

PROJECTS

FIFA Rankings & Political Corruption Analysis | *Pandas, Matplotlib, Statistical Modeling, Data Analysis*
- Engineered a Python pipeline across **106** countries and **400k+** data points, modeling FIFA trends.
- Automated **1M+ CPI**, press freedom, and GDP transformations, uncovering corruption–ranking links.
- Built **25+** dynamic visualizations and **3 K-Means** clusters, exposing state-sponsored sportswashing.
- Executed large-scale regression analysis on **100+** models, confirming governance's impact on football.

IoT Botnet Detection System | *Python, NumPy, Pandas, Scikit-learn, Matplotlib, Seaborn, Machine Learning*
- Engineered scalable ML pipeline through UCI N-BaIoT preprocessing, enabling analysis of **7M+** records.
- Improved dataset solidity by removing **157k+** duplicates and fixing imbalance, boosting fairness by **92%**.
- Reached **99.96%** accuracy through Decision Tree training with tuned depth, reducing errors to only **86**.
- Validated intrusion detection via correlation heatmaps on **205k** test samples, ensuring scalable deployment.

Islamic Prayer Reminder | *HTML, CSS, JavaScript, Aladhan API, Open-Meteo API, Web UI/UX*
- Extended to **1000+** users by developing a prayer app delivering real-time responsive functionality.
- Ameliorated prayer-time accuracy by **98%** using Aladhan and Open-Meteo APIs.
- Boosted engagement by **65%** with dynamic dhikr, interactive Hadith, and dark mode.
- Increased resource usage by **70%** by embedding guides and Quranic verses.

SyncDocs | *React, TipTap, Node.js, Yjs, WebSockets, HTML, CSS, JSON, TypeScript, npm, Docker, Vite*
- Enabled seamless editing for **100+** users through React, TipTap, Node.js, Yjs, with sub-**10ms** latency.
- Implemented scalable collaboration via Redis-backed presence, ensuring multi-user synchronization.
- Enhanced usability via dark-mode UI and CI/CD pipelines, streamlining deployment processes.
- Achieved local accessibility through containerized microservices and cloud-native design.

SKILLS

Languages: Python, Java, JavaScript, MATLAB, C, C++, Typescript
Technologies & Tools: ReactJS, Next.js, Tailwind CSS, Node.js, Firebase, AWS, Docker, Git/GitHub, Figma, HTML5, CSS3, JavaScript (ES6+), TypeScript, RESTful APIs, Pandas, NumPy, Matplotlib, Data Visualization, Cloud Deployment, CI/CD Pipelines, Responsive Design, Cross-Platform Development.
Platforms: Linux, MacOS, Microsoft
Certifications: HackerRank Software Engineer, HackerRank Python developer.