Zain Khatri

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WORK & LEADERSHIP EXPERIENCE

NASA Ames Research Center   **Mountain View, CA**
Software Engineering Intern   *June 2025 - Present*
- Developed an interface for FRDL turning system diagrams into runnable fault simulations, allowing engineers to design, define behavior, and simulate failures in one seamless flow using Fmdtools
- Created a Python-based command line tool to convert Draw.io architecture diagrams into executable models by extracting functions, flows, and connections, achieving 98% simulation success
- Automated simulations of fault scenarios across large-scale models, reducing manual validation effort by over 80% and enabling high-throughput safety analysis in early design phases

Machine Learning Intern   *April 2023 - September 2024*
- Spearheaded design of a GPS and ultrasonic sensor driven navigation system for an autonomous rover, attaining precise waypoint accuracy within a 1-meter, lowering obstacle collisions by ~96% overall
- Engineered high performance navigation algorithms in C++ leveraging TinyGPS++ and calibration matrices for magnetometer and accelerometer sensor data, enabling precise heading calculations

UC Berkeley Nanotech Research   **Berkeley, CA**
Machine Learning Engineer   *June 2024 - March 2025*
- Led development of a real-time EEG monitoring system detecting lean behavior in Parkinson's patients with 90% accuracy, and presented findings to lab collaborators for clinical use case alignment
- Architected a real-time ML pipeline utilizing SVM architecture for EEG signal classification, delivering ~30 millisecond classification speeds through parallel processing and GPU acceleration

Innowi Inc.   **Santa Clara, CA**
Software Engineering Intern   *June 2021 - December 2021*
- Built Android POS modules with Python, optimizing payment flow and database sync for 30+ kiosks
- Enhanced backend API performance by 50% and deployed menu configurations across 25+ restaurants

EDUCATION

University of California, San Diego   **June 2025**
B.S. - Cognitive Science: Machine Learning & Neural Computation, Minor: Computer Science
Relevant Coursework: Neural Networks & Deep Learning, AI Algorithms, Supervised & Unsupervised Machine Learning, Large Language Models, Reinforcement Learning, Advanced Data Structures & Algorithms
Leadership & Initiative: Founder & President, Muslim Tech Collaborative | Vice President, Student Government

PROJECTS

Theology LLM Evaluation | *NLP, LangChain, Python, lm-eval-harness, Docker*
- Led a team of 12 to build a multiagent benchmarking system for Islamic ethics & knowledge; launched the first Islamic AI leaderboard with 1000+ prompts and custom evaluations on GPT & Claude

MunchMate - AI-Powered Meal-Planning | *Machine Learning, OpenAI API, React, Python*
- Developed an AI driven nutrition platform with a React front-end, Python back end, and OpenAI API, delivering personalized recipes with 93% user satisfaction, reducing food waste by 27%

Chess CNN Analysis | *Python, TensorFlow, CNNs*
- Trained a convolutional neural network on labeled chess board states to predict tactical moves; achieved 87% top-3 move prediction accuracy and improved board position understanding using spatial encoding

Mania - AI Styled Digital Journal | *React, JavaScript, Firebase, Computer Vision*
- Engineered a responsive journaling platform with smart formatting using a YOLO model trained on 300+ personal entries to maintain consistent styling, featuring image-based color extraction, and auto-save

TECHNICAL SKILLS

Languages & Libraries: Python, JavaScript, C++, Java, Swift, SQL, PyTorch, TensorFlow, scikit-learn, NumPy, Pandas, SciPy, YOLO, BERT, LangChain, LangGraph, NLP, Computer Vision, EEG Signal Processing, React, Firebase, REST APIs, CLI Development, Postgres, AWS (S3, EC2), Docker, Git, GitHub, CI/CD, XML Parsing