Mohsin Khawaja

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EDUCATION

University of California, San Diego   **June 2025**

B.S. - Cognitive Science: Machine Learning & Neural Computation, Minor: Computer Science

Relevant Coursework: AI Algorithms, Supervised & Unsupervised Machine Learning, Advanced Data Structures & Algorithms, Neural Networks & Deep Learning, LLMs, Reinforcement Learning, Advanced Machine Learning Methods

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EXPERIENCE

UC Berkeley Machine Learning & Nanotech Research | Berkeley, CA   **June 2024 - Present**

Machine Learning Engineer / Researcher

● Engineered an EEG monitoring system to analyze brainwave activity to detect leaning in individuals with Parkinson's disease, providing real-time feedback to prevent potential falls and improve mobility

● Architected a real-time ML pipeline using SVM architecture for real-time EEG signal classification, delivering ~30 ms classification speeds through parallel processing and GPU acceleration

● Applied Python, scikit-learn, and MNE-Python for advanced EEG preprocessing, including spatial filtering, segmentation, and power spectral density analysis, training models achieving 90% accuracy

● Built real-time gaze direction classifier using EEG data and Random Forest, producing 95% accuracy

InterestingSoup | San Francisco, CA   **June 2021 - September 2021**

Software Engineering Intern

● Developed and optimized backend API endpoints using Python and Flask, improving data retrieval speed by 30%

● Collaborated in a cross-functional team to integrate a real-time analytics dashboard, enhancing user engagement insights

Muslim Tech Collaborative at UC San Diego | La Jolla, CA   **August 2024 - Present**

Founder & VP

● Led technical boot camps and events to help students develop technical skills, gain practical experience, and explore innovative ethical AI applications, fostering a community of open-source development

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PROJECTS

Leukemia Classifier - AI Blood Cancer Detection | YOLO, TensorFlow, NumPy, NLP, Python

● Built a ResNet50-powered AI system analyzing 3,200+ blood smear images to classify leukemia subtypes, achieving 81.0% accuracy and 85.2% AUC-ROC for early cancer detection

EEG-Based Attention State Classification | SVM, LSTM, CNN, Python, TensorFlow, NumPy

● Built an ML system using EEG data (DEAP dataset) to classify cognitive states (Focused, Distracted, Overstimulated), extracting key frequency band features and achieving 90% accuracy with SVM, LSTM, and CNN models

San Diego Airbnb Analysis | Python, Pandas, Scikit-Learn, Kaggle

● Analyzed 10,000+ San Diego Airbnb listings to identify how listing descriptions, amenities, and location factors influence pricing and guest perception, leveraging NLP and regression models to uncover key insights

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 and reducing food waste by 27%

TECHNICAL SKILLS

Languages & Libraries: Python, PyTorch, TensorFlow, Scikit-Learn, NumPy, SciPy, Pandas, SVMs, PCA, NLP, C++, Java, JavaScript, React, Swift, YOLO, EEG Signal Processing, BART, Decision Trees, Firebase, ARM