

Zahir Ali

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Work & Leadership Experience

UC San Diego Machine Learning Research

Machine Learning Engineer

San Diego, CA

June 2025 - Present

- Developed decentralized reinforcement learning (RL) policies for robotic swarms using local sensing and repulsion-based control (fan + magnet actuation).
- Implemented and benchmarked DDPG, PPO, and SAC in custom Gym environments to evaluate swarm goal-reaching performance under varying agent counts and observation radii.
- Designed shared neural network policies for decentralized agents with continuous action spaces, replacing DQN-style discrete models.
- Built modular simulation, visualization, and analysis pipelines for rapid experimentation and debugging

American Society of Civil Engineers

Full Stack Engineer

San Jose, CA

January 2025 - Present

- Designed and developed a responsive, website for SJSU Concrete Canoes Club and ASCE team using Next.js, React, and Tailwind CSS, improving club engagement by 40
- Engineered a seamless integration with Google Sheets API using OAuth2 authentication and REST API calls, enabling real-time tracking of donations and automated membership application processing
- Developed multiple automation scripts in JavaScript/Node.js that synchronize website content with Google Sheets data, reducing manual update time from hours to minutes and ensuring data consistency

Education

University of California, San Diego

June 2027

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

Relevant Coursework: Neural Networks & Deep Learning, AI Algorithms, Supervised Unsupervised Machine Learning, Large Language Models, Reinforcement Learning, Advanced Data Structures Algorithms

Leadership Initiative: Vice President of Education, Muslim Tech Collaborative | Vice President, Fraternity

Projects

Theology LLM Evaluation | *NLP, LangChain, Python, lm-eval-harness*

- Worked on 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.

Robotic Swarm Navigation | *Python, Reinforcement Learning, Machine Learning, Open AI GYM*

- Trained a model using TD3 and DDPG reinforcement learning algorithms to help navigate a robotic swarm to reach a specific target without prior knowledge.

TritonGuard | *Swift, React*

- Developed a community app for students at risk for deportation by helping students be able to report and communicate anonymously. Collaborated with the UCSA to scale to UC campuses statewide.

ApplyPal - AI Automated Email Generator | *React, JavaScript, Firebase, OCR*

- Engineered an emailing tool to help students tailor their emails specifically using their resume and webscraping for professional opportunities with automatic follow ups.

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