Shifanaaz Fazalur

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EDUCATION

University of California, Davis
B.S in Computer Science (GPA: 3.861/4.0) **June 2026 (expected)**
Selected Coursework: Machine Learning (ML), Data Structures, Design & Algorithms, Probability & Statistics, Human-Computer Interaction, Computer Architecture, Object-Oriented Programming, Discrete Math, Calculus I–III, Linear Algebra, Theory of Computation, Physics

WORK EXPERIENCE:

Research Assistant, Drone System with 3D Simulation and XR Integration, UC Davis Jun 2025 - Present
- Developing and validated an embedded quadcopter system using Pixhawk flight controllers, NVIDIA Jetson Nano with Intel RealSense T265 for SLAM for indoor/outdoor navigation in GPS-denied environments.
- Configuring real-time communication between the drone and Ground Control Station (GCS) via MAVLink over UART/WiFi.
- Building Unity-based XR simulations to mirror physical drone behavior and allow synchronized spatial feedback and collision testing.

Research Assistant, AI and NLP for Environmental Governance, UC Davis Mar 2025 - Present
- Developed an NLP pipeline in R and Python to extract and process over 1,000 public comments from government policy PDFs.
- Applied TF-IDF and transformer-based models (BERT/RoBERTa) to classify environmental discourse into policy-relevant themes.
- Prompted LLMs (including Ollama) to analyze rhetorical patterns, assess tone, and compare public sentiment against agency statements with improving model accuracy (95%).

'SpeakProse' QA & Data Analyst Intern, Cognixition Inc., San Leandro, CA Jun 2023 - Sep 2023
- Improved the assistive speech application 'Speakprose' by identifying edge-case bugs, refining test protocols, and suggesting UX/UI changes to improve accessibility and user engagement.
- Collaborated with the engineering team to analyze user interaction data and implement changes that boosted reliability by 18%.

Data Science Intern, PilotCity Inc., San Leandro, CA Jun 2022 - Sep 2022
- Supported development of an educational data-tracking app by conducting exploratory analysis of student activity and survey data.
- Performed QA testing across mobile platforms and collaborated on feature improvements informed by user testing

Student Assistant, Computer Architecture, UC Davis Jun 2025 - Present
- Tutored students and supported architecture projects involving FSMs, Datapaths, Cache and CPU implementation in Logisim.

ACADEMIC PROJECTS (SELECTION)

Secure Communications via Covert Timing Channel Simulation, Programmer**,** Winter 2025
- Simulated packet transmission and buffer (overflow/underflow) dynamics in Python.
- Conducted over 100 test cases to analyze system performance and data leakage rates under varying network loads.

Register-Level CPU Simulation and Cache Design, Programmer, Spring 2025
- Designed and tested custom CPU and cache system using Logisim (multiplexers, ALUs, decoders, etc).
- Achieved 5% reduction in execution cycles for basic arithmetic operations through circuit optimization.

Student Success Prediction Webapp, ML Programmer/Designer, Spring 2025
- Built a Flask-based web application of Neural Network, Random Forest and Linear/Polynomial regression model using student lifestyle habits (study hours, sleep, diet, etc.) to predict final exam scores.
- Model trained on 200+ student profiles using K-fold cross-validation.

LEADERSHIP & ACTIVITIES

Swift iOS Coding Club, VP of Marketing/Tech Director/Treasurer May 2025 - Present
- Mentored 10+ members in Xcode/TestFlight, led deployment of two iOS app prototypes.
- Developed onboarding guides and managed website updates, boosting online engagement by 40%.

Machine Learning Student Network Club, Marketing Director May 2025 - Present
- Designed and maintained digital assets for ML workshops; launched campaigns reaching 1,000+ students that increased ML event attendance by 50% over two quarters.

SKILLS

Programming Languages: C, C++, Python, Java, JavaScript, R, Swift, Bash, Assembly (x86), SQL
Systems & Networking: BGP, TCP, UNIX, Serial Communication, GDB, Logisim
Embedded Systems & Robotics: MAVLink, Jetson Nano (NVIDIA), RealSense T265 (Intel), ROS, Pixhawk (ArduPilot)
Machine Learning & AI: PyTorch, TensorFlow, Scikit-learn, Transformers, Cross-Validation, Model Deployment (Flask)
Data Science & NLP: Text Preprocessing, PDF Extraction (R), NLP Classification, Statistics, Pandas, NumPy, Matplotlib
Development Tools & Platforms: GitHub, Google Colab, Unity XR, Unity 3D, Xcode, Figma,, VSCode, HTML, CSS