Atif Usmani

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Education

University of California, Irvine — Irvine, CA
B.S. Data Science — *Expected June 2027*

- Relevant Coursework: ML and Data Mining, Data Structures and Algorithms, Linear Algebra, Calculus
- **BIAS Lab**: Developed a causal sensorimotor framework to train AI agents to learn environmental dynamics through actions and sensory feedback; modeling an action-conditioned prediction pipeline.
- **Cell Universe Lab**: Engineered a PCA-based algorithm predicting cell colony behavior with 95%+ biological accuracy; optimized the pipeline for 6× spatial resolution and 40% less computational overhead.

Experience

Digital Manufacturing Systems Engineer Co-op — July 2026 – Present
Entegris — *Bedford, MA*

- Led an edge-to-cloud data manufacturing pilot supporting 1K+ process variable sensor readings per second.
- Deployed dockerized edge stack to segmented network and designed northbound integration to GCP.
- Configured OPC UA connectivity to SCADA and standardized process data via Digital Twin asset models.
- Modeled an edge parameter optimization model reaching R^2 of 0.93, leading smart manufacturing effort.
- Launched Grafana performance watch-tower covering 6 KPIs from live time-series data via Prometheus.

Machine Learning Engineer Intern — March 2026 – June 2026
Caliber Boards — *Irvine, CA*

- Implemented an XGBoost model for candidate risk assessment, improving AUC by 33% over baseline.
- Populated the PostgreSQL DB with 493 candidates profiles, joining raw data on 1,200+ platform users.
- Developed a data pipeline resolving UUID discrepencies, merging 725 records into a training dataset.

Data Analyst Intern — June 2025 – August 2025
California University of Science and Medicine — *Colton, CA*

- Constructed a Power BI dashboard, analyzing 105k+ visitors and 4k+ item requests across 4 databases.
- Designed interactive visuals and measures demonstrating a greater than 2× increase in location traffic.
- Automated end-to-end data refresh with scheduled ETL pipeline, cutting manual update time by 90%.

Projects

Solar Shield: Solar Cyber Risk Engine | *Python, FastAPI, scikit-learn, deck.gl, Census API, NVD API*

- Clustered 32,958 ZIP codes into 5 solar cyber risk tiers using K-means on property, income, and cyber.
- Developed a FastAPI backend with property lookup via the Melissa API and deck.gl for address analysis.
- Curated 57 solar CVEs from the NIST NVD and scored 9 solar inverter vendors on exploit severity.

Parallax AI: Multi-Agent Decision Debate | *Python, FastAPI, Claude, AsyncAnthropic, SSE, Docker, Railway*

- Integrated LLM APIs into a multi-agent backend service modeling cognitive biases in decision making.
- Architected an async FastAPI backend with streaming SSE responses for real-time agent debates.
- Deployed containerized AI service to the cloud using Docker and Railway, supporting live API traffic.

Community & Leadership

Muslim Tech Collaborative at UC Irvine — April 2024 – June 2025
President & Chapter Co-founder — *Irvine, CA*

- Founded UC Irvine chapter; supporting 40+ active members through technical and prof dev opportunities.
- Directed 3 consulting projects in software solutions, overseeing project scoping, execution, and delivery.

Technical Skills

Programming: Python (pandas, numpy), Java (Node-RED), SQL, C++, R, JSON
AI & ML: Agentic AI (OpenAI, Claude, Ollama), MCP, Pytorch, TensorFlow, LangGraph, Vertex AI, scikit-learn
Frontend: Grafana, Looker, LangSmith, Streamlit, React + Next.js, PowerBI,
Cloud & Infra: GCP (GKE, BigQuery, Pub/Sub), AWS, Kubernetes, Docker, Terraform, Linux/Bash, Prometheus