Farhan Zaman

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Software Engineer specializing in ML systems, LLM pipelines, and scalable backend services.

PROFESSIONAL EXPERIENCE

Full-Stack Developer

LifeSphere News | Los Angeles, California 06/2025 - Current

- Built LLM-driven news generation pipeline on **AWS EC2**, handling article creation, validation, storage, and delivery
- Implemented comprehensive **article quality gating**, including **neutrality enforcement**, **sensitive-topic handling**, **source verification**, **duplicate detection**, and content completeness checks
- Developed **article categorization infrastructure**, enabling **scalable search** and content organization
- Implemented **backend API endpoints** to serve article summaries, metadata, and tags to frontend clients
- **Migrated site hosting** from **Vercel** to **AWS CloudFront**, improving performance, reliability, and cost control
- Built **internal evaluation and monitoring tooling** to validate LLM outputs against source material, detect quality regressions, and monitor tag-distribution drift over time

Software Engineer Intern

Mondego Group, UC Irvine | Irvine, CA 06/2024 - 09/2024

- Expanded and optimized **UI components** for a platform providing specialized AI assistants
- Architected **login system** with database integration, REST API endpoints, and OAuth authentication
- Built and deployed **Tax and Immigration Law AI assistants**, broadening product functionality
- Implemented a **Retrieval-Augmented Generation (RAG) framework**, reducing hallucinated LLM responses

Grader, Course Assistant

Donald Bren School of Information and Computer Sciences, UC Irvine | Irvine, CA 01/2024 - 06/2024

- Designed Python-based auto-grading pipeline to evaluate **~120 students'** assignments and projects
- Built scripts to score student code against **test cases, edge conditions**, and **correctness criteria** I wrote
- **Automated aggregation** of grade results into **structured spreadsheets**, improving grading consistency and fairness
- Debugged student code **at scale**, identifying common failures to **refine grading logic and test coverage**

PROJECTS & OUTSIDE EXPERIENCE

Emotional Artwork Sentiment Analysis

CNNs and Transformers for Semi-Supervised Learning 3 mo

- Built models on **180k+ children's drawings** to classify emotions (anger, fear, happy, sad)
- Trained and fine-tuned **CNNs (ResNet-50)** and **Vision Transformers (ViT)**, boosting accuracy from 78% to **84%** with semi-supervised learning
- Applied **data augmentation, regularization, Bayesian optimization** to raise generalization & inference reliability

Identify Non-Electrified Regions Across Northern Africa

Dataset Preprocessing, Visualization using Computer Vision 3 mo

- Developed a **CNN pipeline** to detect non-electrified areas in Northern Africa using satellite imagery
- Preprocessed daytime/nighttime imagery to isolate human settlements and detect lack of electrification
- Visualized outputs with **PCA, t-SNE, and UMAP** to support NGO resource allocation and electrification planning

EDUCATION

University of Southern California 2026 - 2028

M.S. in Computer Science - Data Science

University of California, Irvine 2021 - 2025

B.S. in Computer Science, specialization: Machine Learning and Intelligent Systems

SKILLS

Languages - Python, C/C++, TypeScript, Java, JavaScript, HTML, CSS || **Web** - React, Next.js, REST APIs

Tools - Git, Postman, MongoDB, Firebase, GitHub Actions

Cloud - AWS Services (S3, SQS, DynamoDB, Lambda, Step Functions), Docker, Cloudflare, Vercel