Muhammad Huzaifa Khan Suri

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Work Experience

Oatmeal Health, Machine Learning Engineer — Remote US *July 2024 – Present*

- Led the development of a 3D volumetric object detection & classification system on 10TB of imaging data, achieving 0.95 AUC and 95% sensitivity. Containerized training with Docker and tracked experiments via MLflow.
- Productionized classification models on GCP using Vertex AI and event-driven Cloud Functions. Reduced DevOps overhead by 65% and lowered infrastructure costs by $75K.
- Trained a 3D foundation model (Attention U-Net) on GCP using an 8-GPU distributed setup, achieving ∼7x faster training throughput vs. single-GPU runs.
- Designed a data ingestion and quality framework with regulatory compliance using data engineering best practices, boosting data utility by 15%.
- Delivered 15+ technical presentations to engineering & product stakeholders, achieving 90% alignment and driving adoption of 2 major initiatives.

Mayo Clinic, AI Research Affiliate — Remote US *Jan. 2023 – June 2024*

- Developed a multimodal prognosis prediction system using foundation models (DINOv2) and vision transformers, achieving 0.92 AUC and reducing operational costs by $49K annually.
- Applied cross-modal transfer learning using ResNet variants to analyze video data and classify frame usefulness, improving processing efficiency by 20% and reducing review time by 35%.

VirtuSense Technologies, Machine Learning Engineer Intern — Peoria, IL *June 2023 – Aug. 2023*

- Designed an event detection algorithm by building data pipelines using 940 infra-red / depth sensor videos and utilizing motion temporal templates, achieving 0.9+ AUC.
- Developed a monocular depth estimation model for edge devices (up to 10 meters range), reducing equipment cost by 45% and improving depth accuracy by 15%.

CITY at LUMS, Data Science Researcher — Lahore, PAK *July 2021 – June 2022*

- Led development of a geospatial simulation in ArcGIS to optimize city-wide emergency response, achieving a 10% reduction in response times and a 45% increase in coverage efficiency.
- Identified 5 statistically significant hotspots using geostatistical analysis, informing policy decisions that reduced accident rates by 20%.

Projects

Unstructured Text Summarization (NLP / GenAI / LLMs)

- Developed an end-to-end pipeline for summarizing unstructured notes using a Clinical Visit Note Summarization Corpus.
- Fine-tuned Facebook's BART-large model on 80 samples, achieving 0.499 ROUGE-1 and ROUGE-Lsum test scores.

Garment Semantic Segmentation (CV)

- Conducted exploratory data analysis on a benchmark fashion dataset with 0.2 million data points and 13 classes.
- Trained a Vision Transformer with Mask R-CNN (pretrained on COCO dataset), achieving 0.746 mAP and 0.733 IoU.

Credit Card Fraud Detection (Tabular + PySpark)

- Analyzed 21M financial transactions using PySpark to detect fraud patterns among 2000 users.
- Trained a Random Forest & XGBoost classifier, achieving an 84% F1 score on highly imbalanced data.

Education

University of Illinois Urbana-Champaign | MS, Electrical & Computer Engineering *May 2024*
Relevant Coursework: Thesis Research, Deep Learning, Computer Vision, Data Mining, Database Systems **GPA 4.0/4.0**

Lahore University of Management Sciences | BS, Electrical Engineering *May 2021*
Graduated with High Distinction | Dean's Honor List | Merit Scholarships (∼7500 USD) **GPA 3.9/4.0**

Skills

Programming & Data:	Python, C++, MATLAB, SQL, Shell Scripting
Deep Learning:	CNNs, Vision Transformers, GANs, RNNs, VAEs, LLMs, FPNs, RPNs
Computer Vision:	3D Object Detection, Semantic Segmentation, Monocular Depth Estimation
Machine Learning:	Classification, Regression, Decision Trees, Clustering, PCA/ICA
Libraries & Tools:	OpenCV, PyTorch, Tensorflow, OpenAI API, ONNX, Pandas, Matplotlib, Scikit-Learn, React.js, Tableau
Cloud & MLOps:	GCP, AWS, Docker, Kubeflow, MLflow, Prometheus / Grafana, CI/CD, GitHub, Ubuntu, Spark, ArcGIS