Omer Raza

MACHINE LEARNING ENGINEER

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Professional Summary

Machine Learning Engineer with 3+ years of experience deploying end-to-end ML systems in healthcare and logistics. Scaled CV, OCR, and risk models on AWS, via automation and CI/CD. Strong research foundation (EMNLP, IEEE) in GANs and LLMs; complemented by full-stack skills (React) to deliver production-ready solutions. Recognized with top-tier performance award

Skills

Machine Learning: Computer Vision (OCR, GAN, Yolo & OpenCV), LLM (Llama, Qwen), XGBoost, GNN

Deep Learning Frameworks: PyTorch with Sklearn (extensive). TensorFlow & JAX (familiar)

Data Processing: Spark, SQL, Pandas | **Cloud & MLOps**: AWS, Kafka, GitLab CI/CD, Docker

Programming Languages: Python, JavaScript, C++ | **Web** & **Mobile**: React & Electron

Industry Experience

Lalamove, Hong Kong – Multinational delivery logistics

Machine Learning Engineer **Feb 2022 - May 2023**

Services & MLOps tools: Lambda API, EC2, Sagemaker, Real time/Batch processing & Kafka.

- Led accuracy boost from 65% to 85% in brand vehicle detection for market penetration tracking by standardizing label schema for cross regional teams, applying targeted augmentations (sticker masking) on mislabeled or low confidence predictions, and model decoupling (car vs sticker). Resulted in $70K+/year savings.
- Developed and deployed object detection, OCR (with clustering heuristics) via automated evaluation and CI/CD (GitLab + AWS Lambda with Docker images), cutting driver bonus approval time from 2 days to 5 seconds.
- Engineered a risk assessment model (F-score: 0.95) by implementing a full pipeline (data ingestion to ETL to feature engineering to real-time inference). This boosted daily fraudulent transaction detection by 20%

Received the highest bonus in the year (4 people among 150 in the office)

Gense Technologies, Hong Kong **–** Award winning healthcare startup

Machine Learning & **Software Engineer** **Nov 2020 - Dec 2021**

- Deployed the Gense Mobile App (React) with live syncing to a proprietary EIT device, supporting user account and EIT test session management. This enabled rapid internal testing and real-time demos for partner investors
- Developed iterative experimentation-driven ML models, achieving 88% EIT image quality and 99% breathing alignment accuracy, which enabled confidence-based diagnostics in the app.

Research Experience

RA Machine Learning at **CIVS (Purdue University)** on multimillion dollar grants for steel industry **Sep 2023 - present**

- Architected a silicon content prediction pipeline for blast furnaces (90% accuracy, currently in beta testing at partner plant), aimed at improving production efficiency.
- Developed a hearth erosion model (beta testing soon) by implementing first-principle models and optimization techniques (3-5 min), later accelerated with GNNs (20 sec), which can improve operator safety and campaign life

RA Machine Learning (remote) at **CUHK** and **HKUST** **Sep 2022 - Mar 2023 & Mar 2024 - Jul 2024**

- First/co-author on multiple ML papers (EMNLP, IEEE) focusing on GANs LLMs (see website for publications)

Independent Research Project - Facial Expression Transformation via **Latent Embedding Interpolation** **2021**

- Automated large-scale (10K+) comic panels scraping and face extraction via custom scripts and CNN detection
- Analyzed latent space interpolation in GANs, including StyleGAN, for facial transformation tasks (e.g stoic → expressive)
- Findings: Hyperplane-guided vector shifts led to stabler generative outputs than direct transformation models

Education

M.S. in **Computer Science** at Purdue University, *GPA 4.0/4.0* **Aug 2023 - May 2025**

B.Eng. in **Computer Science** at The University of Hong Kong (HKU), *First Class Honors* **Aug 2016 - Jun 2020**

1) Deans Honor List, 2) HKU Foundation Scholar & 3) Young Tsun Dart Scholar (1 student / year / department)