

Professional Summary

Accomplished **ML Engineer** with 3+ years of experience developing and productionizing **Computer Vision**, **OCR**, and risk detection models at scale on **AWS**. Reduced operational costs by \$70K+ in annual savings through **ML automation** and **CI/CD pipelines**. Complemented by skills in end-to-end **web/mobile development** using **React**, and a strong **research** background with publications in top conferences (EMNLP, IEEE) on GANs and LLMs.

Skills

- **Machine Learning:** Vision Transformer, Diffusion Models, LLM, XGBoost, Lightgbm, GNN, GAN, Computer Vision
- **Deep Learning Frameworks:** PyTorch, TensorFlow
- **Data & Image Processing:** Sklearn transform, OpenCV
- **Cloud & MLOps:** AWS, Kafka, GitLab CI/CD, Docker
- **Programming Languages:** Python, JS, C++
- **Web & App Development:** React, Electron
- **Data Processing Tools:** Spark, SQL, Pandas

Industry Experience

Lalamove

Machine Learning Engineer

Feb 2022 - May 2023

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

- **Improved** image localization and **object detection** accuracy from **65% to 85%** which enabled accurate **market penetration tracking**. This enhancement reduced manual labeling costs by **\$70K+ annually**
- Developed and deployed **object detection**, **OCR**, and **clustering models** with **automated evaluation** and **CI/CD deployment** (GitLab + AWS Lambda with Docker images). This process **reduced** driver bonus approval time from **2 days** to **5 seconds**.
- Engineered a **risk assessment model (F-score: 0.95)** by implementing a full **pipeline** (from data ingestion to ETL to feature engineering to real-time model inference). This resulted in a **20% increase** in daily **fraudulent transaction detection**

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

Gense Technologies

Machine Learning & Software Engineer

Nov 2020 - Dec 2021

- Deployed the **Gense Mobile App (React Native)** on **Play Store** with features for **user account management**, **live test syncing**, and **real time result visualization** and statistics.
- Developed **iterative experimentation-driven ML models**, achieving **88% EIT image quality** and **99% breathing alignment accuracy**, which enabled **confidence-based diagnostics** and automated retest prompts within the **app**.

Beardbee

Software Engineer (Remote Commission)

Feb 2020 - Mar 2020

- Produced a **portable** single code base **MVP** via **Electron** for **web**, **desktop** and **mobile** platform of a charging system

Lalamove

Tech Intern Software Engineer

Jun 2019 - Aug 2019

- **Refactored legacy** code to employ **Redux**. **Debugged** backlog tickets and **created tests** for an order grouping and route formation **microservice** which was later **deployed** to **India & Thailand**

Research Experience

RA Machine Learning at CIVS Purdue University on Multimillion dollar grant projects for steel industry

Sep 2023 - present

- Built a **pipeline** for **silicon prediction** in blast furnace (**beta testing in plant**). The resultant model achieved **90% accuracy** with **interpretable insights** using SHAP and expert-vetted features which can ultimately **improve production efficiency**.
- Developed **hearth erosion modeling (beta testing soon)** for blast furnaces by implementing **first principle models** and **inverse macro and micro optimization routines** from **scratch** to achieve optimization in **3-5 minutes**. GNNs further reduced computation time to **20 seconds**. The model can enhance operator safety and **extend campaign life**.

RA Machine Learning (remote) at CUHK and HKUST universities

Sep 2022 - Mar 2023; Mar 2024 - Jul 2024

- **First author** and **co-author** of multiple papers (see select publications)

Select Publications

Peer-reviewed papers in **top conferences** and **journals** like **EMNLP**, **IEEE** & **MDPI**

1. Silicon Content Prediction in Blast Furnace via ML (First Author) - Accepted at MDPI Materials 2025
2. FIRST: Efficient Trustworthy Distillation (Co-Author) - Accepted at EMNLP (Main) Conference 2024.
3. SR TGAN: Temporal Smoke Removal (Equal Contribution First Co-Author) - Accepted at IEEE EMBS BHI 2024.
4. Mutual Information for EIT to CT Aligned Transformation (First Author) - Accepted at IEEE EMBC 2023.

Education

M.S. in Computer Science, GPA 4.0/4.0

Aug 2023 - May 2025

Purdue University

B.Eng. in Computer Science, First Class Honors

Aug 2016 – Jun 2020

The University of Hong Kong (HKU)

1) Deans Honor List, 2) HKU Foundation Scholar & 3) Young Tsun Dart Scholar (1 student per year of study)