

Mashaan Alshammari

Riyadh, Saudi Arabia

Senior Machine Learning Engineer | Applied Deep Learning & MLOps

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Senior Machine Learning Engineer with a PhD in Computer Science and strong hands-on experience building **deep learning systems** across computer vision, graph learning, and optimization. Proven ability to design, train, and deploy scalable models using **PyTorch, JAX, and cloud-based GPU/TPU infrastructure**. Experienced in **MLOps, API-based model serving, and performance optimization**, with applied work spanning banking, energy, and large-scale research environments.

CORE SKILLS

Programming	- Python, Linux Shell, Git
Deep Learning	- PyTorch, Hugging Face Transformers, Lightning.AI, JAX, Flax
Model Types	- Vision Transformers, CNNs, GNNs, NeRF, recommendation models
Computer Vision	- DETR, DINOv2, object detection, image segmentation
MLOps & Deployment	- FastAPI, Docker, model serving, REST APIs
Cloud & Compute	- Google Cloud Platform (Compute Engine, TPU, GPU)
Data & Storage	- SQL (Oracle, SQL Server, MySQL), data preprocessing pipelines
Performance	- Profiling, optimization, distributed training

APPLIED MACHINE LEARNING PROJECTS

Object Detection API (DETR)

PyTorch, Hugging Face, FastAPI, Docker

- Built and deployed a **production-ready object detection** service using Facebook's DETR model for real-time inference.
- Implemented a FastAPI /predict endpoint returning annotated images with confidence-scored bounding boxes.
- Containerized the service with Docker and deployed it on a managed cloud environment for scalable inference.

JAX Model Performance Optimization

JAX, XLA, TensorBoard

- Profiled and optimized JAX training workloads across varying batch sizes and hardware configurations.
- Identified compute vs. communication bottlenecks in distributed training setups.
- Delivered actionable optimization recommendations to improve model throughput and training efficiency.

3D Scene Reconstruction (NeRF)

PyTorch, Lightning.AI, Google Cloud TPU

- Designed and trained NeRF pipelines for high-fidelity 3D scene reconstruction from video data.
- Orchestrated large-scale training on **Google Cloud TPUs**, achieving high-quality reconstructions (PSNR ~45).
- Automated multi-resolution dataset preparation and experiment configuration for reproducible training runs.

PROFESSIONAL EXPERIENCE

Senior Data Scientist

SAB Bank

Aug 2025 to Present

Riyadh, Saudi Arabia

- Designed and deployed **machine learning and optimization models** in a highly regulated banking environment, supporting workforce planning, operational efficiency, and decision automation.
- Built **production-grade Python pipelines** integrating data ingestion, feature engineering, model training, and inference across Oracle, SQL Server, IBM DB2, and TRIRIGA data sources.
- Delivered **model-driven dashboards and decision-support tools** by integrating ML outputs with Tableau and downstream BI systems.
- Collaborated closely with business stakeholders, data engineers, and BI teams to translate operational requirements into **deployable ML solutions**.

YouTube Creator (Machine Learning)

Self-employed

Sep 2023 to Aug 2025

Riyadh, Saudi Arabia

- Designed and implemented **advanced deep learning models** (Vision Transformers, Swin, DINOv2, GNNs) across PyTorch and JAX on GPU/TPU platforms.
- Built reproducible ML pipelines covering **data preprocessing, training, hyperparameter tuning**.
- Developed and deployed model APIs and inference services using **FastAPI and Docker**.
- Produced **50+ technical ML tutorials** and open-source examples focused on applied deep learning and performance optimization.

Assistant Professor

University of Hail

Jan 2021 to Sep 2023

Hail, Saudi Arabia

- Taught graduate-level courses in **Machine Learning for Big Data**, and applied analytics.
- Supervised applied ML projects covering **model development, evaluation, and deployment**.
- Mentored students on bridging research concepts with production-ready ML systems.

Educational Program Developer

Sydney Polytechnic Institute

Sep 2020 to Jan 2021

Sydney, Australia

- Designed and delivered **industry-aligned curricula** in machine learning, data science, and cloud.
- Developed hands-on labs covering **model training, deployment, and scalable cloud architectures**.

System Engineer

SABIC

Aug 2010 to May 2012

Jubail, Saudi Arabia

- Supported secure, air-gapped infrastructure in a high-security industrial environment.
- Led server upgrades and system migrations with zero operational downtime.

EDUCATION

PhD in Computer Science, The University of Sydney,

2017 to 2021

MSc in Computer Science, KFUPM,

2013 to 2016

ADDITIONAL

- **Languages:** Arabic (native), English (fluent)
- **YouTube:** youtube.com/@mashaan14
- **LinkedIn:** linkedin.com/in/mashaan