

MOHAMED MARTINI

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SUMMARY

Machine Learning Engineer with 3+ years of industry experience owning deep-learning models end-to-end, from experimentation and training through deployment, monitoring, and backend management.

SKILLS

- **Programming Languages:** Expert in Python, SQL. Familiar with C/C++, Dart.
- **ML & Deep Learning:** TensorFlow, PyTorch, Pandas, NumPy, scikit-learn, OpenCV, MLflow.
- **Data & Cloud:** Apache Beam, BigQuery, PySpark, Airflow, Kafka, Postgres, Pub/Sub, GCP (Cloud Run, Cloud Functions, Model Registry, Artifact Registry, GCS, IAM, Cloud Logging, Cloud Trace).
- **GenAI & LLM:** LangChain, LangGraph, RAG, HuggingFace, vector DBs (Weaviate, pgvector).
- **Backend & DevOps:** FastAPI, REST, gRPC, WebSockets, SSE, Docker/Compose, GitHub Actions, OpenTelemetry.

PROFESSIONAL EXPERIENCE

Lever AI

Jul 2025 - Present

Founder & Principal Engineer

- Founded an independent ML & software studio; design and ship AI-powered, data-driven products end-to-end, from data pipelines and model integration to production backends and deployment. **Selected projects:**
 - **Guesstimate** — real-time multiplayer estimation game, live on [Android](#) and [iOS](#). Built an **LLM-native ETL pipeline** producing 1k+ semantically unique, high-quality questions; a **low-latency, high-consistency** multiplayer backend; **end-to-end distributed tracing**; and **GitFlow CI/CD** across dev/prod.
 - **Stack:** FastAPI, LangChain, Firestore, Postgres/pgvector, OpenTelemetry, Flutter.
 - **ThermoPulse (in progress):** industrial cold-chain monitoring with time-series analytics and early fault detection.
 - **Sanad (in progress):** **RAG** and temporal citator over 300k scanned Syrian-law PDFs, tracking amendments and repeals across legal history. The current OCR pipeline cuts the character error rate from 53.8% to 13.1%.

Pison Technology

Oct 2022 - Jul 2025

Machine Learning Engineer III (promoted from Machine Learning Engineer, Apr 2025)

- Owned a sleep-stage classification model end-to-end: **improved previously-deployed model's macro F1 by 15%** across 1,200+ TensorFlow experiments, **mitigated class imbalance** with cost-sensitive and contrastive losses, designed a **custom gating layer** that lifted accuracy while shrinking the feature set by an order of magnitude, **made inference 3× faster**, and shipped **SPI-based drift monitoring** to trigger automated re-training alerts.
- Built real-time biosignal **gesture-detection** models; wrote **Cythonized** extension modules and vectorized bottleneck functions, sharply accelerating both online inference and offline modeling.
- Implemented a SOTA **domain-invariant classification network** with adversarial training in PyTorch from the original paper (3-person internal "Hackawee").
- **Sped up a batch ETL pipeline 190×** with Apache Beam; led **BigQuery** adoption, choosing partitioning and clustering to match query patterns.
- Deployed and monitored services on Google **Cloud Run** and **Cloud Functions**; consolidated standalone repos into a single **uv workspace**, enabling cross-OS collaboration and smaller deploy containers.

University of Massachusetts Lowell

Jan 2021 – June 2022

Research Assistant

- Reviewed the **object-detection** literature for multi-modal imagery and selected **YOLO**; studied and benchmarked efficient CNN backbones (**EfficientNet**, **MobileNet**, **SqueezeNet**, **ResNet**) against **Jetson Nano** latency and memory budgets.
- Owned the detection pipeline end-to-end: **data collection**, **preprocessing**, **generative-AI augmentation**, **training**, and **edge deployment**, curating a **30 GB** dataset; and shipping real-time **25 FPS** detection.
- Implemented **Reinforcement Learning** agents and environments for cooperative multi-agent Search and Rescue tasks.

EDUCATION

University of Massachusetts - Lowell

- *Master's in Computer Engineering* | GPA 4.0 2021-2022
- *Bachelor's in Electrical Engineering* | GPA 3.8 2018-2021