

Mohammad Sheikh

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About Me

M.Sc. candidate in Data Science and Engineering at Politecnico di Torino. Experienced across the full ML lifecycle — from predictive modeling on large-scale datasets (2.5M-record thesis on hierarchical time-series forecasting) to building and deploying production LLM applications with RAG and vector search. Backend engineering background in Node.js and TypeScript, with hands-on experience taking systems from prototype to production deployment.





Education

- 2023 – Present 📖 **M.Sc. Data Science and Engineering** in Politecnico di Torino.
Thesis title: *Predictive Analysis of Climate Impact on the Italian Mediterranean Buffalo.*
- 2018 – 2022 📖 **B.Sc. Computer Engineering** in University of Kurdistan.
Achievement: *Awarded Top Idea at the University of Kurdistan Startup Event from 44 submissions., Received funding from the University to establish a startup focused on AR technology., Research assistant (RA) and teaching assistant (TA), Student Union.*
GPA: 3.7/4.0













Work Experience

- Dec 2022-Sep 2023 📖 **Co-founder, Back-end Developer, VGostar**
 - Co-founded an AR technology startup, developed a cross-platform web-based AR execution platform, and presented products at ELECOMP international exhibition 2023.
- Jan 2022-Sep 2023 📖 **Back-end Developer, Zharfa Accelerator**
 - Created and launched the Microlearning project using NodeJS, MongoDB, and Docker, accelerating employee readiness and earning initial funding with its first application in the Kurdistan Science and Technology Park.
 - Guided the development team as Scrum Master on an online gold shop project, improving platform performance while gaining valuable teamwork and leadership skills.







Projects

- 2026 📖 **SKILLMAP — AI Career Coach**  
 - Built and deployed a full-stack SaaS application implementing a Retrieval-Augmented Generation (RAG) pipeline: PDF ingestion, embedding generation, vector search with Supabase pgvector, and structured output via Google Gemini LLM.
 - Engineered the data layer with Supabase PostgreSQL (row-level security) and Google OAuth; deployed to production on Vercel with CI/CD.
 - Designed a multi-stage retrieval pipeline: retrieval → semantic reranking → structured LLM generation, with prompt engineering for output consistency and hallucination reduction.
- 2026 📖 **NETWORK LOG RAG ASSISTANT**  
 - Built and deployed a RAG web app for network and service logs: line-window chunking, Supabase pgvector retrieval, grounded answers with source attribution via Google Gemini.
 - Added an agentic layer that autonomously suggests operator actions per query and applies rule-based flagging of high-failure IPs — combining LLM reasoning with deterministic decision logic.

Projects (continued)



- 2026  **Thesis Project: Machine Learning Applications in Dairy Buffalo Farming**  
- Designed and implemented predictive ML pipelines (XGBoost, Random Forest, Neural Networks) for hierarchical time-series forecasting of milk yield across a Total → Farm → Animal hierarchy on 2.5M production records.
 - Engineered a multi-source data pipeline integrating hourly farm weather aggregates, computed heat-stress indices (THI, WHI), and analyzed climate impact on dairy production to inform farm-management decisions.
- 2025  **URBAN TRAFFIC FLOW FORECASTING**
- Developed a time-series forecasting pipeline to predict traffic volume for multiple toll plazas.
 - Benchmarked classical statistical methods (Holt-Winters) against LightGBM algorithms.
- 2024 - 2025  **CHRONOS FORECASTING FRAMEWORK**  
- Fine-tuned a T5-based model on a new dataset to improve model performance.
 - Implemented a consistency calibration extension for Improving Uncertainty using Python.
- 2024  **OIL SPILL DETECTION WITH HYPERSPECTRAL IMAGING**  
- Hybrid Random Forest and CNN model for Oil-Water Classification in Hyperspectral Images.
 - Utilized the Hyperspectral Oil Spill Database (HOSD) for benchmarking and validation.
- 2024  **VEHICLE PRICE PREDICTION USING MACHINE LEARNING** 
- Developed a model to predict vehicle prices using supervised learning.
 - Performed data cleaning, feature engineering, and benchmarking.
 - Achieved a top score of **96.736**, ranking **1st** among **88** participants.

Skills


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|-----------------------|--|
| Generative AI & NLP |  Agentic AI, LLM integration, RAG, prompt engineering, LangChain, vector search (pgvector), embeddings. |
| Programming Languages |  Python, Java, Node.js, C#, SQL. |
| ML & DL Frameworks |  PyTorch, TensorFlow, Hugging Face Transformers, OpenCV, scikit-learn. |
| Data & Databases |  PostgreSQL, MongoDB, Supabase, Spark, Hadoop, Prisma, vector DBs. |
| Software & Tools |  Git, Linux, Docker, Google Cloud, Vercel, Tableau, Jira, \LaTeX . |
| Languages |  English (IELTS 6.5), Italian (A2, improving), Kurdish (Native), Persian (Native). |

Volunteer Experience

Research Assistant

- 2021  **Endolink**, The aim of this project is to identify and expand the list of names for a specific location across multiple languages.
- 2022  **KurdNet**, This project aimed to extend and enhance KurdNet, a Kurdish WordNet originally developed by Dr. Sina Ahmadi in 2014.

Teaching Assistant

- 2019  **University of Kurdistan**. Teaching Assistant for "Fundamentals of Computer Programming" (C language) with Dr. Amanj Khorramian at the University of Kurdistan.