ÖMER FARUK AYDIN

AI ENGINEER — Machine Learning, Generative AI, Technical Leadership

Istanbul, Türkiye · oemerfarukaydin97@gmail.com · +90 551 103 57 17
oemerfaruk.dev · linkedin.com/in/oemer-faruk-aydin · github.com/oemerfaruk · ORCID: 0000-0001-6850-3219

SUMMARY

AI/ML engineer and technical leader with a track record spanning enterprise software delivery, applied AI research, and team/project leadership. Leads technical delivery at SEOEM.CO, where he also co-founded the company: enterprise frontend projects, technical instruction, and AI/data consulting for university teams. In parallel, has worked for years as an AI researcher within an academic space physics group, building large-scale data pipelines and ML models for ionospheric forecasting, and deployed an LLM-powered autonomous analysis platform. Combines technical depth in Python, ML/DL, and generative AI with hands-on experience leading people, projects, and client delivery.

TECHNICAL SKILLS

- **Languages:** Python (Expert), SQL, JavaScript, C++, Golang
- **ML/DL:** TensorFlow, PyTorch, Scikit-learn, Pandas, NumPy
- **Generative AI/LLM:** Gemma 3, Ollama, Diffusers, LoRAs, Transformers
- **Data Engineering:** PostgreSQL, Asynchronous Pipelines, ETL, High-Throughput Data Collection
- **Infrastructure:** Docker, Git, Linux, CI/CD
- **Leadership:** Company Management, Project Delivery, Client & Stakeholder Management, Technical Instruction
- **Research:** Experiment Design, Peer-Reviewed Publication, Conference Presentation (IEEE, TFD41, National Polar Sciences Symposium)

EXPERIENCE

Technical Lead & Co-Founder — *SEOEM.CO, Istanbul* Oct 2023 - Present

- Own backend architecture and data modeling for internal and client production systems; design asynchronous, high-throughput workflows for data-heavy features.
- Led end-to-end technical delivery of frontend projects for large enterprise clients, from proposal through launch.
- Delivered frontend development instruction at Yıldız Teknik Üniversitesi through the company.
- Provided AI and data-analysis consulting to researchers, teams, and institutions across multiple universities.
- Co-founded the company and continue to help guide its direction alongside hands-on technical work.

AI Researcher — Space Physics — *YTU Space Physics Research Group* 2019 - Present

- Work as an AI researcher within an academic space physics team, applying computer science and ML methods to ionospheric disturbance monitoring.
- Design and maintain automated, high-throughput data collection and processing pipelines for global ionospheric disturbance monitoring (Python, PostgreSQL), covering GNSS data across multiple monitoring stations.
- Build ML-driven performance analysis pipelines on large-scale GNSS datasets — regression and time-series modeling, feature extraction, and segmentation — to generate actionable insight; present results at international conferences (IEEE, TFD41, National Polar Sciences Symposium).
- Co-author peer-reviewed publications; principal investigator on space-weather predictive modeling projects, independently driving research from hypothesis to validated model.

Data Scientist & ML Developer — TÜBİTAK POLAR 1001 — *Antarctica Ionospheric Monitoring* 2025 - Present

- Monitored polar ionosphere TEC over Antarctica's Horseshoe Island using low-cost GNSS receivers; built an ML-driven performance analysis pipeline for continuous GNSS measurements.
- Presented preliminary findings at the National Polar Sciences Symposium.

Principal Investigator — Space Weather ML Modeling — *YTU / TFD41 Conference* 2025

- Developed a predictive model for TEC forecasting using regression and time-series ML algorithms, trained on historical GNSS/TEC data; published in IEEE and presented at the International TPS Congress.

KEY PROJECTS

Founder & Lead Developer — VectorOSINT — *AI / OSINT Analysis Platform* 2025 - Present

- Designed and built an OSINT platform centered on an LLM-powered automated analysis pipeline (Gemma 3 via Ollama), continuously ingesting and synthesizing data from 20+ sources.
- Owned the pipeline end-to-end: data ingestion, feature extraction, LLM orchestration, and automated report generation — direct hands-on groundwork for finetuning and multi-modal generative-AI feature.

TEACHING & MENTORSHIP

- Technical Instructor, Deneyap Türkiye — mentored 100+ students in software development.
- Recognized with a Best Presentation Award in connection with Teknofest (KATAY project).

PUBLICATIONS

- "Calculation of Ionospheric Disturbances of Earthquakes in Europe with TEC Anomalies" — IEEE
- "Modeling Space Weather Parameters With Machine Learning: Total Electron Content Forecasting" — TFD41 Congress
- "Preliminary Analysis for Polar Ionosphere Monitoring Based on GNSS-Based TEC Measurements at Horseshoe Island, Antarctica" — National Polar Sciences Symposium

EDUCATION

- **M.Sc. in Physics (Ongoing)** — Yıldız Technical University, Istanbul — 2024 - Present
- **B.Sc. in Physics** — Yıldız Technical University, Istanbul — 2015-2024