

Berke Deniz Bozyigit AI/ML Engineer

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Summary

AI Research Engineer with a focus on machine learning theory, model optimization, and neural architecture design. Experienced in formulating and conducting end-to-end research from hypothesis generation to experimental validation and prototype deployment. Currently developing novel nonlinear aggregation functions for artificial neurons with demonstrated performance gains on CIFAR-10 benchmarks. Skilled in statistical learning, transformer fine-tuning, and scalable ML systems, with a growing interest in AI for financial decision-making and trustworthy large-scale systems.

Professional Experience

Data Scientist, Akbank

- Applied AI Research in LLMs: Fine-tuned a 7B-parameter *Llama-2* using parameter-efficient methods (LoRA, QLoRA), achieving 20% latency reduction in enterprise HR screening.
- Model Evaluation & Experimentation: Conducted comparative studies on transformer optimization strategies, benchmarking inference latency and throughput.
- Computer Vision Research: Designed OCR and multi-dataset validation pipelines; improved financial document parsing accuracy by 18%.
- Generative AI Systems: Integrated *Stable Diffusion* models into production systems, implementing parallel inference achieving sub-3s response time.

10/2022 – 04/2024

Istanbul, Turkey

Data Science & ML Intern, HAVELSAN,EHSIM

- Signal Processing Research: Developed scalable RF signal analysis frameworks using Python; increased processing throughput by 30%.
- Applied classification models to detect and characterize signal patterns, supporting real-time defense analytics.

07/2021 – 11/2021

Ankara, Turkey

Data Engineering Intern, Xinerji Software

- Designed SQL-based ETL pipelines for preprocessing and feature engineering, ensuring data integrity for ML model training.

04/2021 – 07/2021

Istanbul, Turkey

Education

M.Sc., Artificial Intelligence, University of York

09/2024 – 09/2025

York, United Kingdom

Research Focus:

- Neural Architecture Innovation
- Dissertation:** "A New Type of Artificial Neuron: Exploring Nonlinear Aggregation Functions" – designed novel neuron architectures (F-Mean, Gaussian, Hybrid) achieving improved model robustness on CIFAR-10 benchmarks.

B.Sc., Computer Science and Engineering, Sabancı University

09/2017 – 09/2022

Istanbul, Turkey

Capstone Project:

Spatio-Temporal Data Analytics Platform

- Developed full-stack platform using Python, MongoDB, React for climate measurements, demographic data, and sentiment analysis integration.

Skills

ML/AI

PyTorch, TensorFlow, Scikit-learn, XGBoost, LightGBM, LLM fine-tuning, Computer Vision, OCR, Optimization, Statistical Modelling

Programming

Python, C++, SQL

MLOps

MLflow, Airflow, Docker, Kubernetes, Git, CI/CD, REST APIs

Cloud & Data

AWS (S3, EC2, Lambda), PostgreSQL, SQL Server, Linux

Languages

English: (C1) | **German:** (A2) | **Turkish:** (Native)