

Muhammed Berk Önder

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Experience

Machine Learning Engineer *P.I. Works* 07/2022 - Present

- Developed a Telco Chatbot using **LLM** framework with **LangChain** and **Flowise**, integrating gpt-3-turbo model with OpenAI's API and local open-source models such as Mistral and Llama2 with **Ollama**.
- Led the creation of an **AI/ML**-based Heatmap **Forecasting** system, using football match data to predict network traffic volume through **regression** analysis. Managed end-to-end processes encompassing data cleaning, regression model selection, and evaluation.
- Implemented **Multivariate Anomaly Detection** to improve detection capabilities for scenarios like sleeping cells and special event detection.
- Conducted **Univariate Anomaly Detection** on **Time Series** data to detect sleeping cells in LTE networks using **Clustering** algorithm, focusing on data preparation, model evaluation, and hyperparameter tuning.
- Provided support to team members and collaborated with other teams as needed for project execution.
- Developed a synthetic data generation technique using statistical methods such as Monte Carlo simulations to enhance data granularity.

Education

MSc, High Energy and Plasma Physics (3.63/4.00) - Istanbul University 2021 - 2024

Relevant Courses: Advanced Statistical Methods in Physics I/II, Numerical Methods and Applications in Physics I/II, Chaos: Theory and Applications.

BSc, Physics (3.31/4.00) - Istanbul University 2015 - 2021

Relevant Courses: Calculus I/II/III, Differential Equations, Mathematical Methods, Programming I/II, Numerical Methods.

Projects

- **Steam Games' Recommendation System:** Built a game recommendation system using clustering techniques on Steam data.
- **NLP with LDA: Topic Modeling:** Implemented topic modeling using Latent Dirichlet Allocation (LDA) on food review data.
- **Rain Prediction:** Developed a rain prediction model using Australia's weather data with scikit-learn and Flask for deployment.
- **Forecasting Historical Sales Data:** Conducted a case study on historical sales data focusing on regression-based forecasting methods.

Skills

- **Languages:** Python, SQL, Bash, Markdown, \LaTeX , Html/Css
- **Frameworks & Packages:** Pandas/Polar, Scikit-learn, Numpy, FastAPI, Flask, PyMC, MLflow, Streamlit, PySpark, TensorFlow, PyTorch
- **Database:** PostgreSQL, Clickhouse, MySQL, MongoDB
- **DevOps:** Docker, Git, GNU/Linux, Google & IBM Cloud Services
- **LLM:** LangChain, Flowise, Ollama