

Muhammed Berk Önder

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Experience

Prototype and Data Analytics Engineer *P.I. Works* 07/2022 - Present

- Developed a Telco Chatbot using **LLM** and frameworks like **Ollama** and **LangChain**. Integrated Mistral and Llama2 models and utilized **FastAPI** and **Docker** for seamless **SQL** querying and contextual question answering.
- Led the development of an **AI/ML**-based Heatmap **Forecasting** system, leveraging football match data for **Regression**-based prediction of network traffic volume. Managed end-to-end processes encompassing data cleaning, regression model selection, and evaluation.
- Implemented **Multivariate Anomaly Detection** to enhance detection capabilities for cases 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 other teams as needed for smooth project execution and collaboration.
- Developed synthetic data generation technique to enhance granularity, employing statistical methods such as Monte Carlo simulations to generate probable synthetic data.

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.

Skills

- **Languages:** Python, SQL, Bash, Html/Css
- **Frameworks & Packages:** pandas/polar, scikit-learn, numpy, fastapi, flask, ollama, langchain, pymc, mlflow, streamlit, pyspark, tensorflow, pytorch
- **Database:** PostgreSQL, Clickhouse, MySQL, MongoDB
- **Others:** Docker, Git, GNU/Linux, L^AT_EX, Google & IBM Cloud Services