



Emre DEMIR

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EXPERIENCE

DLR (GERMAN AEROSPACE AGENCY)

May, 2023- Ongoing/Munich, Germany

MASTER THESIS STUDENT

- Working on **AutoML**, mainly on **Neural Architecture Search**.
- Improving the pipeline for making **Neural Architecture Search on Earth Observation** data, that I have been developed before.
- Introducing **Hardware Aware Neural Architecture Search to Earth Observation Deep Learning algorithms** to increase the performance of the algorithm on certain hardware.

SIEMENS FINANCIAL SERVICES

December, 2021- Ongoing/Munich, Germany

DATA SCIENTIST, PART-TIME

- **Created a cash flow prediction Machine Learning models** for United Kingdom and Poland teams, which has **70% better predictions than the existing baseline**.
- Deployed **two distinct Machine Learning pipelines to Azure ML platform**, utilizing advanced technologies to facilitate efficient processing and timely delivery of results.
- Actively participated in **design thinking sessions with other teams**, providing expert input and proposing innovative solutions to meet their unique Machine Learning needs.

INSIDER

July, 2020 - August, 2021/Istanbul,Turkey

MACHINE LEARNING ENGINEER, FULL-TIME

- Contributed significantly to the development and maintenance of an **in-house Auto Machine Learning Platform**, which effectively trains numerous models for **over 450 customers**.
- Developed a prototype **Natural Language Processing (NLP) model using PyTorch** that utilizes Word Generation to accurately predict up to 5 possible webpage types for the customer's next click.
- Leveraged **Apache Airflow, Kubernetes, Docker, and AWS products** such as Codebuild to enhance the **Machine Learning Operations** pipeline, ensuring seamless processing and deployment of models.

VODAFONE

June, 2019 - July, 2020 / Istanbul, Turkey

SOFTWARE ENGINEER, FULL-TIME

- Successfully developed a **Chaos Engineering tool using Python Flask** on Red Hat Openshift that enables Cloud Operations Team to ensure their running nodes can restart within 10 seconds or less, enhancing system performance and reliability.
- Designed and developed a **full-stack vulnerability notifier web application using Python Flask and MongoDB** for the Cyber-Security Team, which effectively manages and tracks inventory of more than 100 various device types, minimizing security risks and ensuring compliance.

EDUCATION

TECHNICAL UNIVERSITY OF MUNICH

2021-Ongoing

M.SC IN INFORMATICS

ANADOLU UNIVERSITY

2013-2019

B.SC IN COMPUTER ENGINEERING

SKILLS

PROGRAMMING LANGUAGES *Experienced:* Python | Scala | SQL *Familiar:* C++ | Rust | Typescript

FRAMEWORKS & LIBRARIES Pytorch | Apache Spark | Numpy | Scikit-learn | Flask | Angular

CLOUD & DEVOPS Docker-Kubernetes | Apache Airflow | Linux | Git | Amazon Web Services | Azure

LANGUAGES *English:* Fluent *German:* Intermediate *Turkish:* Native

PROJECTS

AUTOML PROJECT - CREATING A NEURAL ARCHITECTURE SEARCH BENCHMARK FROM EARTH OBSERVATION DATA

- Contributed to a project at the **German Aerospace Agency (DLR)** aimed at creating Neural Architecture Search (NAS) benchmarks for Earth Observation data, specifically Satellite Images.
- Developed an **automated pipeline** that efficiently trains hundreds of models on HPC, resulting in the successful **training of 1000 Deep Learning models**.
- Implemented **distributed GPU training methods using PyTorch**, drastically reducing the training time of a single model from **12.5 hours to a mere 3 hours**.
- <https://github.com/emreds/tum-dlr-automl-for-eo>

2D TO 3D POINT CORRESPONDENCE ON NON-TEXTURED OBJECTS

- Using a cutting-edge **6D pose estimation model**, we were able to find successful 2D to 3D feature correspondence for non-textured objects.
- This work contains **training of different models using PyTorch** with various textures and compares their effect on 2D to 3D point correspondence finding.
- We have achieved **60% reduction in Training time** for the best performing texture.
- <https://github.com/emreds/3D-Registration>

FOR MORE PROJECTS:  **GITHUB**

LEADERSHIP & COMMUNICATION

1ST PLACE IN HULT PRIZE ESKIŞEHİR ENTREPRENEURSHIP COMPETITION

Got first place by designing a project to reduce young unemployment.

WINNER OF YOUNG SPARKS OF EUROPE ENTREPRENEURSHIP COMPETITION

- Won by being one of the 4 people around 45. Designed and planned a Retail Analytics project.
- Had a paid internship experience in Institute of Entrepreneurship Development, Greece.
- <https://ied.eu/>