Mert Kurttutan

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Experience

AON | Machine Learning Developer | Docker | Azure | Python | Pytorch

August 2022 - Present | Remote, Part-time, Germany

- Developed Automatic Speech Recognition micro-service with FastAPI needed for Research Team,
- Worked on a project to automate cheating detection using deep learning model for tabular data.
- Collected Resume Data and (working on) NLP solutions to process resume for better candidate evaluation

UNIVERSITY OF AMSTERDAM | Research Internship

May 2019 - August 2019 | Amsterdam, Netherlands

- Worked on research about classification of topological insulators using numerical methods and reported on weekly basis to the team of Prof. van Wezel
- Co-authored publication on Phy Rev B. To see the paper, click **here**

LMU MUNICH | Research Internship - High Performance Computing

July 2021 – September 2021 | Online

- Conducted numerical simulations on crystalline systems using tensor network methods, e.g. DMRG, to study magnetic properties and used HPC Clusters
- Co-authored publication on Phy Rev B. To see the paper, click **here**

SABANCI UNIVERSITY | Teaching Assistant for Linear Algebra and Abstract Algebra

January 2016 – May 2020 | Istanbul Turkey

- Conducted Recitation classes, Prepared Quizzes and Graded assignments

Projects

NBA MATCH RESULT PREDICTION |AWS, Apache Airflow, XGBoost,TF, | github link

- Extracted data from nbastats endpoint using api, webscraping proxies; used Apache Airflow, AWS EventBridge and ECS to automate data processing
- Implemented DNN and boosted tree to predict match results, val accuracy $\sim 74\%$
- Deployed containerized web app for prediction using Flask and AWS ECS

OBJECT DETECTION | Pytorch, Tensorflow, TFX | github link

- Extracted data from datasets, COCO, VOC, BDD100K, using XML/JSON and analyzed features
- Implemented Pytorch and Tensorflow version of YOLOv2 architecture (darknet19) and implemented hyperparameter tuning process with Optuna and KerasTuner
- Created deployment pipeline using TFX, and deployed on Kubernetes on Google Cloud using Kubeflow

SALES PREDICTION | Python | github link

- Conducted Data Analysis, Feature Extraction and Dashboard App on sales dataset
- Used tree-based ensemble methods via Xgboost, sklearn to make prediction of future sales and Implemented stacking method
- Implemented app for sales prediction using FastAPI and Docker

AUCTION WEB APPLICATION | PHP, MySQL, C++ | github link

- Implemented ETL process and database with features e.g. trigger, buffer manager
- Implemented web application that conducts process of bidding using PHP and CSS

Skills

PROGRAMMING

Proficient:
MATLAB • Scala• MySQL • PostgreSQL • Bash

Experienced:
Python • Julia • LaTeX • C++

TOOLS/PLATFORMS/OS

Git • Docker • Kubernetes • CMake • Linux • Google Cloud Platform / AWS • TensorFlow, TFX • Pytorch • Kube-flow/Airflow/FastAPI/django

Publications

• Topological invariants of rotationally symmetric crystals
• Ferromagnetism and Skyrmions in the HFH Model

Education

FREIE UNIVERSITÄT BERLIN

Master's in Physics (Quantum Information Theory)
Sep 2021 - Present | Berlin

SABANCI UNIVERSITY

Bachelors in Materials Science
Sep 2017 - June 2021 | Istanbul
School of Engineering
Minor in Physics and Math,
GPA=3.96/4.00

Certificates

Coursera Deep Learning Specialization, TensorFlow: Advanced Techniques Specialization, ML Engineering for Production Specialization, For verification and complete list, please see **here**

References

Jasper van Wezel, Associate professor, University of Amsterdam.
physics@jvanwezel.com

Durmus Ali Demir, Professor of Physics, Sabanci University
durmus.demir@sabanciuniv.edu