

BERKAY MENGUNOGUL

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EDUCATION

Marmara University

Bachelor of Science in Computer Engineering; GPA: 3.04/4.00

Thesis: Early Diagnosis of Alzheimer's Disease with Artificial Intelligence

Advisor: Assoc. Prof. Mustafa Agaoglu

Istanbul, Turkey

Sep 2022

PUBLICATIONS

Conference Publications

- C1. C. Erdoganyilmaz and **B. Mengunogul**, "An Original Natural Language Processing Approach to Language Modeling in Turkish Legal Corpus: Improving Model Performance with Domain Classification by Using Recurrent Neural Networks," 2022 Innovations in Intelligent Systems and Applications Conference (ASYU), Antalya, Turkey, 2022, pp. 1-6, doi: 10.1109/ASYU56188.2022.9925363.

WORK EXPERIENCE

VeriUs Technology

Machine Learning Engineer

Istanbul, Turkey

Sep 2022 - Present

- Led a team of 5 interns, succeeded 98% accuracy by training BERT models for Name Entity Recognition task.
- Applied pretraining techniques and fine-tuned models for NER, Summarization, and Semantic Search tasks.
- Reduced the cost of training significantly by transitioning models from DataParallelism to ZeRO.
- Reduced the size of the Fasttext model by 37% by removing the negative vector matrix.
- Utilized MLFlow and Docker for tracking and managing developed services.

Compact Mind

Machine Learning Intern, Remote

Austin, Texas, USA

Aug 2022 - Sep 2022

- Obtained knowledge about Curriculum Learning, Backtests, Meta-Strategy Paradigm, Copula Theory.
- Explained "System 1 and System 2 Thinking" approach to improve decision-making.
- Implemented a tax-cutting mechanism in the algorithm's Environment Layer to enhance model realism.

Marmara University

Undergraduate Researcher, Supervisor: Assoc. Prof. Murat Can Ganiz

Istanbul, Turkey

Feb 2022 - Aug 2022

- Presented and Implemented a clustering approach for 271 crime types, resulting in 30 clusters.
- Conducted experiments on Multi-Class Classification and NER tasks using various machine learning models.
- Deployed Doccano, assisted and monitored the users, collected approximately 10,000 labeled documents.

Redzeplin UG

Software Engineer Intern

Berlin, Germany

Aug 2021 - Oct 2021

- Learned about Web 3.0 and Blockchain Technology. Developed decentralized applications (DApps) using Web3.js.
- Took a leading role in designing the system architecture that enables users to send cryptocurrencies as gifts.

Shelly Sleep

Full-Stack Developer, Remote

Berlin, Germany

Jun 2020 - Feb 2021

- Designed and normalized database, developed a RESTful API using Flask.
- Built a custom Swift-React-Native bridge library to overcome iOS restrictions.
- Learned React-Native independently, enabling the successful completion of the project after team members left.
- Published the app in Germany and Turkey. Reached over 10,000 registered users till October 2021.

HONORS AND AWARDS

Best Paper Award Certificate 2nd Place

Sep, 2022

The project “An Original Natural Language Processing Approach to Language Modeling in Turkish Legal Corpus: Improving Model Performance with Domain Classification by Using Recurrent Neural Networks” has been awarded Best Paper Award 2nd Place at Innovations in Intelligent Systems and Applications Conference (ASYU 2022) September 7-9, 2022, Antalya, TURKEY.

Honor Student

Sep, 2022

Graduated as honor student from Marmara University.

BlockFellow Hackathon 2019

Feb, 2019

Developed a supply chain tracking system with blockchain technology. The project selected in top 10 among hundreds of projects from 15 Universities at first blockchain hackathon in Turkey.

GRANTS

Erasmus+

Aug 2021

By the European Commission, a grant was awarded to undertake an internship in Germany, where practical experience was gained and language and cultural skills were improved.

PORTFOLIO OF MOST RELEVANT PROJECTS

Marmara University

Istanbul, Turkey

Projects

Jun 2020 - July 2022

- **Early Diagnosis of Alzheimer’s Disease:** Conducted research on Alzheimer’s Disease to diagnose its early stage from MRI data with CNNs. Finetuned a ResNet model with MRI data of patients from ADNI, OASIS3.
- **Tracking and Counting Number of Passing Vehicles At A Highway:** Implemented BLOB Detection and trained YOLOv5 with vehicle images then compared the performance on a short footage from surveillance camera.
- **Grid World:** Implemented Q-Learning and Prioritized Sweeping Algorithm to solve a self-made grid world puzzle and analyzed the results with different parameters.

TECHNICAL SKILLS

Programming Languages/Tools

Python, PyTorch, PyTorch Lightning, TensorFlow, Keras, Pandas, Numpy, Scikit, OpenCV, Matplotlib, Plotly, DeepSpeed, Docker, Flask, SQL, C/C++, JavaScript, React-Native, REST API, Telerik Fiddler, Git, \LaTeX

Skills

Machine Learning, Deep Learning, Reinforcement Learning, NLP, Computer Vision, RNN, LSTM, Transformer, GAN, Distributed Training

LANGUAGE PROFICIENCIES

Turkish

Native

English

Full Proficiency, TOEFL 96 Points