

# Berkay Mengunogul

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## Skills

**Languages:** Python, SQL, R

**Frameworks & Libraries:** Pandas, NumPy, Scikit-learn, PyTorch, Hugging Face Ecosystem (Transformers, Datasets, Tokenizers, Evaluate, PEFT), XGBoost, SciPy, Matplotlib, PySpark, Django, Flask, spaCy, NLTK, Pytest, Websocket, LightGBM, CatBoost, LangChain

**Tools:** Git, Docker, CI/CD pipelines, GitHub Actions, MLflow, Azure ML, AWS, Apache Spark, Hadoop, Elasticsearch

## Experience

**Machine Learning Engineer**, Wisecare AI – Austin, Texas Feb 2024 – Present

- Engineered a cutting-edge multi-agent AI architecture to deliver real-time, 100% automated health insurance support.
- Created an algorithm that concurrently estimates the costs of hundreds of insurance plans for personalized matching.
- Automated prompt testing and monitoring to ensure consistency and seamless system updates.
- Adopted Behavior-Driven Development (BDD) to improve stakeholder alignment and reduce post-deployment issues.

**Machine Learning Engineer**, VeriUs Technology – Istanbul, Turkey Sept 2022 – Sept 2023

- Expanded training dataset from 500 to 10,000+ records through advanced data augmentation techniques, enabling effective handling of diverse and rare cases.
- Reduced AI inference costs by 80% by fine-tuning and applying distillation techniques to over 60 open-source models.
- Optimized memory usage and reduced model training time by 75% through sharding model layers.
- Mentored 5 interns in AI development, leading them to build a 98% accurate named entity recognition system.
- Streamlined AI deployment with MLFlow and Docker for faster business and customer adaptation.

**Undergrad Researcher**, Marmara University – Istanbul, Turkey Sept 2021 – July 2022

- Accelerated research of legal AI applications by managing the data labeling process of 10,000+ legal documents.
- Developed ML models to anonymize sensitive legal data, ensuring privacy law compliance and data protection.

**Full-stack Developer**, Shelly Sleep – Berlin, Germany June 2020 – Feb 2021

- Designed a PostgreSQL database and built a RESTful Flask API handling up to 6000 requests per minute.
- Stepped up as lead, delivering the MVP in 3 months and securing over 10,000 users by October 2021.

## Education

**Northeastern University** – Master's in Informatics Dec 2024

**Marmara University** – Bachelor's in Computer Science Sept 2022

## Publications

- C. Erdoğanyılmaz, **B. Mengunogul** and M. Balci, "Unveiling the Black Box: Investigating the Interplay between AI Technologies, Explainability, and Legal Implications," 2023 8th International Conference on Computer Science and Engineering (UBMK), Burdur, Türkiye, 2023, pp. 569-574, doi: 10.1109/UBMK59864.2023.10286653.
- C. Erdoğanyılmaz 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.

## Awards

**CPS Leaders and Scholars Award** Dec 2024

- Selected for outstanding achievements and potential, receiving a partial tuition scholarship.

**Best Paper Award Certificate 2nd Place** Sept 2022

- Awarded 2nd Best Paper at ASYU 2022 for an innovative NLP approach to Turkish legal language modeling using RNNs.