Abdullah Kavakli

abdullahkavakli.com | abdullahkavakli90@gmail.com

EDUCATION

Istanbul Technical University — Istanbul, Turkey
M.S. Computer Engineering — *2023 - Present*

Pamukkale University — Denizli, Turkey
B.S. Computer Engineering, GPA: 3.66 /4.00 (Graduated with highest grade) — *2019 - 2023*

ABOUT

Technical Skills: Python(eg. Scikit-learn, NumPy, Pandas, TensorFlow), PySpark, Excel, AWS, Unix/Linux, Docker, MsSQL, C/C++, Git, LaTeX
Linkedin: linkedin.com/in/abdullahkavakli
Github: github.com/abdullahkavakli
Kaggle: kaggle.com/abdullahkavakli
Languages: Turkish, English

PROFESSIONAL EXPERIENCE

Istanbul Technical University — March 2024 - Present
Research Assistant, Department of Artificial Intelligence and Data Engineering — *Istanbul, Turkey*

- Conducted research in AI and Data Engineering, focusing on innovative algorithms and models.
- Assisted in teaching "Fundamentals of AI", "Optimization for Data Science", "Analysis of Algorithms I" and "Big Data Analytics" courses, providing support with curriculum development, lecturing, and mentoring students.
- Provided guidance to undergraduate and graduate students on research methodologies and project execution related to AI and Data Science.

TUBITAK — April 2023 - October 2023
Data Science Research Intern — *Denizli, Turkey*

- Participated in an academic project titled "Bigcell - Big Data Analysis for Mobile Communication Systems" funded by Turkcell, a leading mobile network operator in Turkey.
- Developed and optimized data mining algorithms, such as Apriori, GSP, and PrefixSpan, to run on GPUs and clusters.
- Achieved up to a 100x performance improvement compared to traditional CPU implementation.
- Utilized the Numba and PySpark libraries to parallelize the algorithms and distribute the workload.
- Contributed to the development of recommendation systems by providing faster and more efficient algorithms for big data.

Jotform — August 2022 - September 2022
DevOps Intern — *Remote*

- Set up the Jotmon project environment and configurations on Google Cloud using Ansible.
- Collaborated with team members on the staging concept and prepared a pipeline for the Jotmon project.

Kavakli Demir Celik — Summers, 1 year
Executive Assistant — *Denizli, Turkey*

- Performed separation, cleaning, transportation, and other recycling processes for several metals.
- Conducted container house repair and maintenance and increased sales by 30%.

PROJECTS

Business Growth Challenge — May 2023
Datathon Silver Medal (2nd out of 11 teams)

- Participated in the METU Statistics and Data Science Club Datathon competition, funded by Ipsos. The competition involved working on a business case to increase the market performance of a cheese brand.
- Cleaned and prepared data for machine learning models, identifying growth opportunities for Prizy Y.
- Identified the most important factors affecting a brand's market share in the given categories and key elements for creating noticeable and memorable advertisements for the cheese brand, Prizy Y.
- Proposed a sustainable market share growth strategy and sales forecasts through 2028.

Credit Card Fraud Detection | *Python, Scikit-learn*

- Developed a machine learning model to detect fraudulent credit card transactions using the Python programming language and the Scikit-learn library.
- Achieved a ROC-AUC score of 98% in detecting fraudulent transactions, outperforming traditional rule-based fraud detection systems.
- Cleaned and preprocessed a real-world dataset containing credit card transactions to identify patterns in the data.
- Utilized various feature engineering techniques such as scaling, oversampling, undersampling, and power transform to optimize the model's accuracy and performance.
- Trained and fine-tuned multiple machine learning algorithms to identify the best model for the dataset.

Brain Tumor Classification with CNN | *Python, Keras*

- Developed a deep learning model using Convolutional Neural Networks (CNNs) to classify brain tumors from MRI images.
- Implemented the model using Python and TensorFlow, achieving a ROC-AUC score of 95% on the test set.
- Preprocessed the MRI images by applying various image augmentation techniques such as rotation, zoom, and flip to improve the model's robustness.
- Used transfer learning by fine-tuning a pre-trained InceptionResNetV2 model, which significantly reduced the training time and improved the accuracy of the model.
- Deployed on Google Cloud.

Restaurant Reviews Classification | *Python, Scikit-learn, SpaCy*

- Utilized NLP techniques to preprocess and clean a dataset of restaurant reviews.
- Engineered features from the text data to represent sentiment and subjectivity.
- Utilized the Scikit-learn library to train and test ML algorithms.
- Achieved a high ROC AUC score of 93% on the test set.

Stock Market Prediction Using RNN | *Python, Scikit-learn, Keras*

- Developed a model for predicting stock prices by training LSTM and GRU models on historical data from the Yahoo Finance API.
- Utilized the TensorFlow library for model development and performance evaluation.
- Visualized model predictions and achieved a Root Mean Square Error (RMSE) of 2.86 on the test set.

Accelerating the PrefixSpan algorithm using GPU | *Python, Numba, Numpy*

- Developed and implemented a GPU-accelerated version of the PrefixSpan algorithm, a sequential pattern mining algorithm.
- Achieved a 75% performance improvement by using the Numba and Numpy libraries.