Murat Karanacakoglu

+90 506 179 98 98 | mkaranacak52@gmail.com | linkedin.com/in/karanacakoglu | github.com/karanacakoglu

Education

Ankara University — Ankara, Turkey
Computer Science Bachelor's Degree, — *3rd Year Student — Expected Graduation: 2027 — GPA: 3.14*

Experience

Part Time Student — 2023 – Present
Ankara University — *Campus Cart Office, Ankara-Turkey*

Projects

3D Brain Tumor Segmentation (BraTS Challenge) | *Python, PyTorch, Multi-modal MRI, Dice Loss*

- Implemented UNet and ResUNet architectures for voxel-wise segmentation of brain tumor sub-regions[cite: 15, 16, 17].
- Processed multi-modal MRI scans including T1, T1ce, T2, and FLAIR sequences for precise detection[cite: 19].
- Integrated a custom Dice Loss function to effectively handle class imbalance in medical volumetric data[cite: 20, 21].

Automated Cell Tracking & Segmentation (U373 Challenge) | *Python, PyTorch, OpenCV*

- Developed a customized UNet architecture for cell detection in phase-contrast microscopy videos[cite: 22, 23, 24].
- Implemented a Centroid Tracking algorithm using Euclidean distance to assign unique IDs and track cell trajectories[cite: 25, 26].
- Achieved a 0.99+ confidence score on low-contrast images using a hybrid Dice + BCE Loss approach[cite: 27, 28].

Pneumonia Detection from Chest X-Rays | *Python, ResNet18, Transfer Learning*

- Developed a clinical diagnostic tool utilizing Transfer Learning on the ResNet18 architecture[cite: 29, 30, 31].
- Optimized the model for faster training times and significantly reduced memory usage[cite: 32, 33].

ING HUB Datathon: Customer Churn Prediction | *Python, ANN, CatBoost, Scikit-learn*

- Built a hybrid churn prediction model using Artificial Neural Networks and CatBoost[cite: 38, 39].
- Engineered features from multiple datasets including customer history and demographic data[cite: 40].
- Optimized model performance focusing on AUC metrics and comprehensive evaluation[cite: 40].

Credit Status Prediction Comparison Study | *Python, XGBoost, LGBM, Scikit-learn*

- Conducted a comparative study using 8+ algorithms including Logistic Regression, SVM, Random Forest, and Gradient Boosting[cite: 45, 46].
- Analyzed model performance metrics to identify the most effective method for loan approval prediction[cite: 46, 47].

Rice Variety Classifier | *Python, TensorFlow, Keras, ResNet50*

- Developed a deep learning model using ResNet50 architecture to classify five different rice varieties (Arborio, Basmati, Ipsala, Jasmine, and Karacadag)[cite: 34, 35].
- Utilized a comprehensive image dataset to train the model to predict the correct rice type from input images[cite: 36, 37].

Telecom Customer Churn Prediction | *Python, ANN, Google Colab*

- Built a neural network to predict customer churn using telecom customer behavior data[cite: 41, 42].
- Implemented data preprocessing, feature scaling, and ANN model training within the Google Colab environment[cite: 43].

Voice Gender Prediction | *Python, Scikit-learn, Classification Algorithms*

- Predicted speaker gender using voice features through a comparative study of Logistic Regression, SVM, Decision Tree, and Random Forest models[cite: 49, 50].
- Selected and optimized the best-performing model based on accuracy and recall metrics[cite: 51].

Technical Skills

Languages: Python, C/C++,C MySQL, R,
Frameworks: TensorFlow/KERAS, PyTorch, PyTorch Geometric, CUDA C/C++, openCV
Developer Tools: Git, Google COLAB, VS Code, Visual Studio, PyCharm
Libraries: pandas, NumPy, Matplotlib, SHARP, Streamlit, Weights and Biases