Kuntay Yilmaz

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Education

Middle East Technical University NCC Turkey

Bachelor's of Science in Computer Engineering *Expected Graduation: June 2027*

- **Grades**: **3.95 GPA**, High Honor
- **Relevant Coursework**: Advanced Programming with C, Computing in Python, Data Structures, Calculus 1-2-3, Linear Algebra, Discrete Computational Structures

Machine Learning Specialization

DeepLearning.AI, by Andrew Ng (Stanford University)

- **Mastered** key ML concepts including **Supervised Learning** (linear regression, logistic regression) and **Unsupervised Learning** (k-means clustering, anomaly detection).
- **Built and optimized Neural Networks** with backpropagation.
- **Implemented models in Python** using TensorFlow and scikit-learn.
- Applied machine learning techniques to real-world datasets, focusing on performance optimization and feature engineering.

Relevant Experience & Projects

Neural Network from Scratch: Fashion MNIST Classification *September 2024*

Technologies: Python, NumPy, Matplotlib

- **Developed a feedforward neural network from scratch** using Python and NumPy, targeting image classification for the **Fashion MNIST dataset**, which contains **70,000** grayscale images across 10 categories.
- Designed custom dense layers with **ReLU and Softmax** activation functions, incorporating **L2 regularization** and dropout layers to mitigate overfitting.
- Implemented backpropagation and gradient updates using **Categorical Cross-Entropy Loss** and **Adam Optimizer** with learning rate decay.
- Achieved approximately **90% test accuracy through hyperparameter tuning** using cross-validation data to **avoid overfitting.**

Pong Game Implementation *July 2024*

Technologies: C++

- Developed a classic Pong game from scratch **without using a traditional game engine**, leveraging **C++** and the Raylib library for graphics rendering.
- Emphasized **object-oriented programming principles** by organizing code into multiple header and source files for each class, enhancing modularity and maintainability.
- Implemented a robust **game loop** to manage game states, ensuring smooth gameplay and responsiveness by handling user input, physics updates, and rendering.
- Designed core game mechanics such as ball movement, collision detection, and paddle interactions, resulting in an engaging and challenging player experience.

Technical Skills

Languages & Tools: Python, C/C++, Git, CMake
Frameworks & Libraries: TensorFlow, scikit-learn, pandas, NumPy, Matplotlib
Concepts: Data Structures and Algorithms, Machine Learning, Object-Oriented Programming