

Kuntay Yilmaz

kuntay.yilmaz@metu.edu.tr | linkedin.com/in/kuntay-yilmaz | github.com/KuntayYilmaz

EDUCATION

Middle East Technical University

Bachelor of Science in Computer Engineering

- **GPA: 3.56**

Turkey

Expected Graduation: June 2027

EXPERIENCE

Research Intern

July 2025 – August 2025

METU NLP Research Group

- Researched state-of-the-art **polygon-based building-extraction models** (HiSup, SamPolyBuild, P2PFormer) for **aerial/satellite imagery**.
- Benchmarked models on **WHU-Mix** & **CrowdAI** datasets using **COCO AP** metrics (AP, AP50, AP75).
- Integrated the top-performing model into a **Django-based data-annotation platform**, enabling **model predicted building polygons** that reduced manual polygon labeling time.

Undergraduate Teaching Assistant

October 2024 – January 2025

Middle East Technical University

- Supported **36** students in **Python** programming by helping them debug code, improve programming logic, and grasp key concepts.

PROJECTS

Fine-Tuned GPT-2 (124M) for Shakespearean Text [GitHub]

November 2024

Technologies: PyTorch, Python, Hugging Face

- Fine-tuned a pretrained GPT-2 124M model using **PyTorch** and the **Hugging Face** Transformers library on the **Tiny Shakespeare** dataset to generate coherent and stylistically accurate Shakespearean text.
- Implemented data preprocessing and tokenization with **tiktoken**, handling large-scale text data while maintaining model compatibility.
- Optimized training performance by techniques such as **gradient accumulation**, **learning rate scheduling**, and mixed-precision training (**BF16**) to enhance computational efficiency.

Neural Network from Scratch: Fashion MNIST Classification [GitHub]

September 2024

Technologies: Python, NumPy, Matplotlib

- Developed a **MLP 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.
- Achieved **90% test accuracy** through hyperparameter tuning using validation data.

2D Game Engine with a Space Shooter Prototype [GitHub]

June 2024

Technologies: C++, SFML, Box2D, CMake

- Developed a custom 2D Game Engine using **C++** and **SFML** for rendering and integrated an open-source physics library to handle collisions.
- Demonstrated engine capabilities through a space shooter prototype, implementing core gameplay elements such as player controls and enemy spaceships.

ACHIEVEMENTS & ACTIVITIES

Algorithm Competition Winter & Summer Camp 2025

2025

- Ranked **1st** in a team contest among **23** students at a one-week-long algorithm camp organized by **Inzva** in 2025.
- [Contest Link](#)

TECHNICAL SKILLS

Languages & Tools: Python, C, C++, OpenGL, Git

Frameworks & Libraries: PyTorch, OpenCV, NumPy, pandas, Matplotlib

Topics of Interest: Real-Time Graphics, 3D Vision, Deep Learning