Yusuf Demir

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EDUCATION

Middle East Technical University (METU) Ankara, Turkey
B.S. in Computer Engineering Sep 2024 – Present

- **CGPA:** 3.53 / 4.00
- **Relevant Coursework:** Data Structures, Algorithms, Discrete Mathematics, Linear Algebra, Differential Equations, Circuit Theory.

TECHNICAL SKILLS

- **Programming Languages:** C++, C, C#, Python, SQL.
- **Technologies & Tools:** ROS2 (Robot Operating System), Unity Engine, Docker, Git/GitHub, CMake, Linux (Ubuntu/Debian), LaTeX.
- **Hardware Experience:** Raspberry Pi 5, Intel RealSense Depth Cameras.
- **Areas of Interest:** Data Structures & Algorithms, Computer Vision, Deep Learning, Game Development.

PROJECTS

CPPCacheDB: C++ In-Memory Database API *Fall 2025*
- Developed a high-performance RESTful API using **C++** and the **Crow** microframework.
- Architected a hybrid storage system: utilizes **RAM** for low-latency caching and **SQLite** for disk persistence to ensure data durability.
- Containerized the application using **Docker** to ensure consistent deployment across environments.
- Implemented JSON serialization logic to handle client-server communication efficiently.

2D Physics-Based Arcade Game (Unity) *Jan 2026*
- Developed a "Breakout" style arcade game using **Unity** engine and **C#** scripting.
- Designed a component-based system to manage rigid-body physics, collision detection, and UI states.
- Implemented custom prefabs and game loop logic to ensure smooth 60 FPS gameplay.

EXPERIENCE

METU ROMER (Center for Robotics and AI) Ankara, Turkey
Undergraduate Researcher December 2025 – Present

- Configured and operated **ROS** (Robot Operating System) nodes to interface with **Intel RealSense** cameras for real-time depth sensing.
- Deployed and validated existing **SLAM** (Simultaneous Localization and Mapping) algorithms in Linux environments to assess mapping performance.
- Conducted literature review on Computer Vision methodologies to support ongoing research projects.

ACTIVITIES & COMPETENCIES

- **Continuous Learning:** Actively preparing for advanced studies in **Deep Learning** and Neural Networks.
- **Communication:** Strong presentation and argumentation skills developed through academic debates (e.g., on digital ethics and social media impact).
- **Languages:** Turkish (Native), English (Advanced/Academic).