Emre Kolbakir

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SUMMARY

Innovative AI & Computer Vision Specialist with over 3 years of experience driving advancements in technology and enhancing user experiences. Expertise lies in developing cutting-edge computer vision solutions, implementing robust AI systems for gaming, and creating sophisticated simulations for autonomous navigation. Proficient in Python, C++, and Unity, leveraging these skills to deliver impactful results in both academic and practical settings. A strong foundation in mathematics complements a dedication to continuous learning and applying innovative solutions in real-world applications.

EDUCATION

Özyeğin University, BSc at Computer Science , İstanbul
2022 — Present

Sınav Anatolian High School, Antalya
2018 — 2022

WORK EXPERIENCE

AI & Computer Vision Specialist, Ozyegin University IT Department, İstanbul
Aug 2025 — Present

- Developing and prototyping computer vision solutions to improve campus security and student experience.
- Focusing on object detection, anomaly analysis, and real-time video analytics using Python, PyTorch, and OpenCV.

AI & Gameplay Programmer, Beren Studio , Ankara
Jul 2024 — Sep 2024

- Contributed to the development of NPC AI systems for an FPS game in hostage rescue scenarios.
- Implemented movement and decision-making using FSM, Behavior Trees, and Utility-Based AI.
- Used OpenCV for real-time player detection and line-of-sight analysis, triggering AI state transitions basedon visual input.

Mathematics Teaching Assistant, Ozyegin University, İstanbul
Apr 2024 — Jul 2024

- Led instructional sessions on advanced topics in Differential Equations, including stability analysis and numerical methods to support undergraduate understandingand application.

Software Developer, Ozyegin University Planetary Robotics Lab, İstanbul
Sep 2023 — Aug 2024

- Developed a simulation for a differential drive rover using Unreal Engine 5 and ROS Gazebo.
- Integrated LIDAR-based sensor fusion for obstacle avoidance and real-time decision-making.
- Designed and implemented autonomous navigation algorithms using C++ (ROS, Eigen, PCL) and Python (OpenCV, NumPy, SciPy).

Gameplay & Physics Programmer, Beren Studio, Ankara
Jul 2023 — Aug 2025

- Developed physics-based gameplay mechanics in Unity (C#) for a VR game.
- Optimized scripts for collision detection, rigid body dynamics, and force-based interactions.
- Integrated VR SDKs for motion control, reducing sickness, and improving precision.

PROJECTS

Emotion- & Tone-Aware Text Rewriter:

A Streamlit-based NLP tool that rewrites English sentences with emotionally aware and professional tones using sentiment analysis and Hermes 2 (Mistral-7B DPO).

- https://github.com/EmreKolbakir/TonePolish

Stock Price Prediction Model

NVIDIA (NVDA) stock price forecasting pipeline with reproducible data ingestion, feature engineering, model training, and interactive performance visualization.

- *https://github.com/EmreKolbakir/nvidia-stock-prediction-model*

Advanced Lane Detection System

An AI-based computer vision project that performs semantic segmentation of driving scenes, identifying lanes, drivable areas, and other key road features to enhance perception in autonomous driving systems.

- https://github.com/EmreKolbakir/lane-detection-project

SKILLS

Languages	Turkish(Native), English(C2), Danish(A2)
Core Programming	Python, Java, C++, C#, JavaScript, HTML/CSS
ML & Deep Learning	PyTorch, TensorFlow, scikit-learn, NumPy, Pandas, Matplotlib
Computer Vision	OpenCV, YOLOv5, PCL, TensorRT, MediaPipe, ROS
Tools & Environments	Git, Linux, Docker, Unreal 5, Blender

References

Available upon Request