

TÜRKÜ EYLÜL EKEN

Electrical & Electronics Engineering Student · Robotics · Embedded Systems · Computer Vision

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PROFILE

Final-year Electrical & Electronics Engineering student specialising in the integration of embedded hardware with computer vision and machine learning. Hands-on experience designing UAV ground control systems, real-time image processing pipelines, and IoT prototypes. Proven ability to lead student engineering teams and deliver working prototypes for national-level competitions and industry partners. Seeking R&D and embedded engineering opportunities where rigorous problem-solving and rapid prototyping create measurable impact.

EDUCATION

Izmir Democracy University — B.Sc. Electrical & Electronics Engineering (English) *Aug 2022 – Jun 2026*
İzmir, Türkiye · Relevant coursework: Signals & Systems, Microprocessors, Control Systems, Digital Image Processing, Data Analysis, Machine Learning.

Bahçeşehir College, Izmir South Campus — High School Diploma *Aug 2018 – Jun 2022*

PROJECTS

Early Detection of Agricultural Pests via Computer Vision — Graduation Project *2025 – Present*
In partnership with Agromila A.Ş. (industry collaboration)

- Designing a camera-based detection system that flags pest activity early to reduce pesticide use and field-scouting labour costs.
- Building image acquisition pipeline using RPi Camera HQ and trained YOLOv26 on a dataset of 56,000+ annotated samples.
- Currently achieving 92% mAP on the validation set; targeting deployment on edge hardware Raspberry Pi 5.

Unmanned Ground Vehicle (UGV) — Team Kaplan, Teknofest & NATO SPS *2026 – Present*
500 kg autonomous tracked vehicle — student team, national defence-oriented competition

- Responsible for the computer vision stack and Ground Control Station (GCS) on a 500 kg, 2x1.5 kW BLDC, tracked autonomous platform (Team Kaplan, ID 647407).
- Built the perception pipeline using YOLOv26 for detection and OpenCV trackers for frame-to-frame target/sign following, deployed on a Raspberry Pi 5 onboard the vehicle.
- Tuned the CV pipeline for outdoor conditions, achieving 60 FPS inference at 1080p on the Pi 5.
- Contributed to GCS development live video feed, GPS telemetry, vehicle status, and manual override communicating with the vehicle over a redundant WiFi + GSM link.

Unmanned Combat Aerial Vehicle (UCAV) — Teknofest *2024 – Present*
Fixed-wing, vertical take-off combat UAV — student team, national defence-oriented competition

- Co-developing an 8 kg autonomous combat UAV with a variable-sweep wing (swept back for high-speed dashes, forward for slow-speed loiter); target dive speed 210 km/h, T/W 1.34.
- Working on the autonomy and computer vision side: YOLOv26s target detection trained on a custom dataset, integrated into a ROS 2 + Gazebo simulation environment for testing before flight.
- Owned the YOLO training pipeline, tracking after detection algorithms and GCS interface of the CV stack.

KKTC Tourism Technologies — Teknofest *2024 – 2025*

Mobile application promoting tourism in Northern Cyprus

- Co-designed a mobile app delivering location-based recommendations and personalised itinerary planning.
- Owned the UI/UX using React Native; integrated Maps API for geolocated points of interest.

Smart Anti-Sleep Glasses for Driver Safety

Apr 2025

- Prototyped wearable drowsiness-detection device on Raspberry Pi Pico W with IR sensors; triggered audio alerts when prolonged eye-closure was detected.
- Built firmware in C++ and a configuration utility in Python; designed and assembled the supporting circuit.

Real-Time Geometric Shape Detection & Classification

May – Jun 2024

- Developed an OpenCV pipeline (pre-processing, contour detection, polygon approximation) to classify hand-drawn shapes from a webcam feed in real time.
- Tuned thresholding and noise-reduction parameters to keep classification stable under varying lighting conditions.

LEADERSHIP & ACTIVITIES

Founder President — Engineering Project Development Community, Izmir Democracy University 2024 – 2025

- Led a student team developing applied engineering projects; organised technical workshops, mentoring sessions and project reviews.
- Grew active membership from 0 to 400+ and shipped 7 internal projects across the academic year.

TECHNICAL SKILLS

Languages & Frameworks: Python, C/C++, JavaScript; OpenCV, NumPy, scikit-learn, Pandas, PyTorch, Next.js, Tensorflow, Ardupilot

Embedded & Hardware: Raspberry Pi (Pi & Pico W), Arduino, ESP32, sensor interfacing, PCB / circuit design

Computer Vision & ML: Image pre-processing, contour & feature detection, CNN-based object detection, real-time inference

UAV / Robotics: Ground Control Station development, telemetry (MAVLink), mission planning, ROS2 / Gazebo / STIL

Tools: Git, Linux, Proteus, MS Office

LANGUAGES

English C2 (IELTS Academic 8.0/9, Apr 2025) · Turkish Native · German B1 · Spanish A2

CERTIFICATIONS & ADDITIONAL

- IELTS Academic — Overall Band 8.0 / 9 (April 2025).
- Computer Vision with OpenCV & Object Detection — Udemy (Sep 2025).
- DETECH 2024 Congress — Participant, Dokuz Eylül University.

REFERENCES

Available on request.