MUSTAFA SABİT EROL

Computer Engineer
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SUMMARY

Computer Engineering graduate from KTO Karatay University (GPA 3.41/4.00, Honor Student). Internship and project experience in visual SLAM and camera calibration with ROS 2, ESP32-based embedded systems, real-time network programming and metaheuristic optimization (ABC, ACO). Seeking a role in embedded software, C++ software development or image processing in the defense industry.

TECHNICAL SKILLS

Programming Languages: C, C++ (Arduino / ESP32), C#, Python, Java, SQL
Robotics and Vision: ROS 2, ORB-SLAM2, RTAB-Map, Webots, LiDAR, camera calibration, point clouds
AI and Algorithms: Metaheuristic optimization (ABC, ACO), A* pathfinding, context steering
Embedded Systems: ESP32, ESP8266, Arduino, MQTT, infrared communication, Wi-Fi
Tools and Platforms: Linux (Ubuntu), Git, Unity, Photon Fusion, socket programming, multithreading, Gazebo and MATLAB (basic)

EDUCATION

KTO Karatay University — B.Sc. in Computer Engineering 2022 – June 2026
- Konya, Türkiye | GPA: 3.41 / 4.00 — Honor Student

EXPERIENCE

Intern — SIMSOFT Computer Technologies July 2025
Ankara, Türkiye
- Set up a ROS 2 environment on Ubuntu and worked with the team on mapping and localization using dual-camera visual SLAM.
- Calibrated and synchronized two cameras using a checkerboard pattern; generated 3D point cloud maps.
- Analyzed the ORB-SLAM2 and RTAB-Map pipelines (feature extraction, pose estimation, loop closure, pose graph optimization) at ROS node and topic level and prepared technical documentation for the team.

Summer Intern — AIMSOFT Software July 2024
Niğde, Türkiye
- Implemented Artificial Bee Colony (ABC) and Ant Colony (ACO) algorithms in Python for assembly line optimization and compared them on simulated assembly lines by solution quality and convergence.

PROJECTS

DuelKeep — Online Mobile PvP Game (Graduation Project, Solo) 2025 – 2026
Unity 6 (URP 2D), C#, Photon Fusion 2, Unity Gaming Services
- Developed and released a real-time 1v1 online action game on Google Play (TR/EN); built server-authoritative networking with Photon Fusion 2, version-separated matchmaking and a skill-based league system.
- Built the backend on Unity Gaming Services (Authentication, Cloud Save, Leaderboards, Cloud Code) with server-side sanity checks on league points.
- Built an adb-based on-device profiling harness (frame times, profiler captures, temperature) and removed bottlenecks, taking Raid mode from 17 to a stable 60 fps.
- Designed a unified isometric depth-sorting model that cut sorting errors from 9.8% to 0.6%; wrote automated collider-audit tooling and added 369 wall bridges.
- Designed bot AI with A* pathfinding and context steering; wrote 112 automated unit tests.

BrickRift — Physics-Based Mobile Brick Breaker (Personal Project)
Unity 6, C#, Android, Python (tooling), AI-assisted development (Claude Code)
- Built an Android brick breaker on a custom 120 Hz 2D physics engine (gravity, friction, Magnus effect) with table-tennis paddle mechanics (spin, smash) and 100 levels across 10 worlds; wrote Python tools for level/skin generation and automated physics tests. Google Play closed testing completed.

Autonomous Vehicle Project — Simulation and Testing (Team Project)
Webots, ROS 2, LiDAR
- Set up the autonomous vehicle simulation in Webots and tested its motion and environment perception behaviour.
- Visualized LiDAR data and validated obstacle detection and vehicle responses in simulation before physical prototype testing.

Embedded and IoT Projects
ESP32, ESP8266, MQTT, C++ (Arduino)
- Built a system that records remote control signals with an infrared receiver, replays them through an ESP32-driven IR LED and is controlled from a local web interface.
- Built an automatic pet feeder based on ESP8266, controlled remotely over MQTT.

COMPETITIONS AND CERTIFICATES

TEKNOFEST UAV Competition — Team Bangu, "Canhıraş" Project (Avrasya University) 2022 – 2023
- Passed the Critical Design Review (CDR) stage as a team.

LEVEL UP AI | ROKETSAN AI Hackathon — AI Workshop (3 days, certificate of participation), Coderspace August 2026

LANGUAGES AND ADDITIONAL

Languages: Turkish (native), English (advanced; YÖKDİL 86.25, exempted from university English prep) | Military Service: Deferred | Driving License: A2, B