

Eren Kürpe

R&D Engineer

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Summary

R&D engineer specializing in embedded systems, PCB design and industrial automation, working comfortably across the full hardware–firmware–software stack (STM32, CAN bus, SCADA, OpenCV). Designed marine power-electronics boards (BMS, VCU, CAN bus), built SCADA and machine-vision systems for production lines, and developed PMSM motor test automation. TEKNOFEST award winner; currently researching AI-based interference detection (TÜBİTAK) and GAN-based data generation (MSc).

Experience

R&D Engineer

Oct 2023 – Present

NSK Group ROTA

Bursa, Türkiye

- Designed marine power-electronics boards: Energy Storage System (high-voltage BMS), Vehicle Control Unit (real-time control) and GPS module.
- Architected the CAN bus 2.0B communication layer across all boards: message definitions, arbitration, fault tolerance and diagnostics.
- Built end-to-end PMSM motor test automation in Python and C#/.NET, integrated with PLM software for centralized test data.

Software Developer

Nov 2022 – Aug 2023

BARIDA Group

Bursa, Türkiye

- Developed multi-PLC Rollform line SCADA (monitoring, alarm management, production reporting) end to end in C#/.NET.
- Built real-time machine-vision quality control for the adhesive line (defect and misalignment detection) with C# and OpenCV.
- Created a G-Code to ABB RAPID converter and a 6-axis robot drawing system (path planning, robot code and operator UI).

Automation R&D Intern

Aug 2022 – Nov 2022

BARIDA Group

Bursa, Türkiye

- Supported Linux-based machine-vision and automation projects; handled SQL database management and SCADA interface design.

Electronics R&D Intern

Jul 2022 – Aug 2022

TREXDCAS Mert Software

Bursa, Türkiye

- Contributed to a 3D robot-arm control board prototype (motor driver, encoder reading, communication) and an analytical inverse-kinematics solver.

Education

M.Sc., Computer Engineering

Sep 2024 – Present

Bursa Uludağ University

- Thesis: synthetic tabular-data generation with Generative Adversarial Networks (GANs).

B.Sc., Electrical & Electronics Engineering

2019 – 2023

Uludağ University

GPA 3.14 / 4.00

Research

Researcher — TÜBİTAK 3501 Career Development Program

Sep 2025 – Apr 2026

Bursa Uludağ University

- “AI-based interference detection in heterogeneous cellular networks” (5G/6G anomaly and interference detection).

Invited Instructor — IEEE BUÜ Computer Society

2025, 2026

Bursa Uludağ University

- Delivered hands-on workshops two years running: Python Programming and IoT with ESP32.

Selected Projects

Prototype Flight Control Board (2023) — B.Sc. final project. STM32- and MEMS-based UAV flight controller: schematic, PCB layout and embedded firmware.

TEKNOFEST UAV — SEMA / UHAVK (2021) — Team captain. Fixed-wing and Class-3 tailsitter VTOL UAV; led the successful flight tests.

Skills

Programming: C, C++, C#, Python, JavaScript, TypeScript

Embedded & Hardware: PCB design, schematic capture, STM32, firmware, MEMS sensors, CAN bus, UART, PLC, power electronics, Arduino

Software & Data: .NET, MSSQL, Modbus, Pandas, TensorFlow, OpenCV, Git, Linux, MATLAB

Domains: Embedded systems, SCADA & industrial automation, computer vision, robotics, AI / deep learning

Certifications

- Programming with MATLAB — Coursera (Vanderbilt University)
- Python (Basic) — HackerRank
- C Programming, Foundation & Advanced — StudySection
- Occupational Health & Safety (Very Hazardous) — Bursa Uludağ University, ULUSEM

Awards

TEKNOFEST 2021 International UAV Competition — 2nd Place, Fixed-Wing Domestic Production (TÜBİTAK).

Languages

Turkish (Native), English (B2 — Upper-Intermediate).