

EMRE YÜKSEL

EMBEDDED SYSTEMS ENGINEER | MSC CANDIDATE

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Embedded systems engineer with a BSc in Electrical-Electronics Engineering and an ongoing MSc in Embedded Intelligence Nanosystems Engineering at the University of Siegen. Hands-on experience in microcontroller firmware (PIC, STM32), avionics hardware design, and communication protocols (USART, SPI, I2C). Currently specializing in AI for edge devices, focusing on Deep Learning algorithms and Large Language Model (LLM) optimization to generate safe, deterministic, and power-efficient bare-metal C/C++ code for embedded systems design.

TECHNICAL SKILLS

- Programming Languages
  C/C++, Python
- Embedded IDEs
  STM32CubeIDE, MPLAB
- Simulation
  Proteus Design Suite, LTSpice
- PCB Design
  KiCAD, Altium Designer
- 3D Design
  FreeCAD, AutoCAD

LANGUAGES

- English – C2 (IELTS 8.5)
- German – A2 (TELC A2)
- Turkish – Native Speaker

EDUCATION

09/2025 – 09/2027

UNIVERSITY OF SIEGEN

Master of Science
Embedded Intelligence Nanosystems Engineering

- *Large Language Model Optimization for Embedded Systems Design*

09/2017 – 03/2023

ESKİŞEHİR OSMANGAZİ UNIVERSITY

Bachelor of Engineering
Electrical and Electronics Engineering

- *Embedded Systems Specialization*

VOLUNTEERING

Erasmus+ Youth Exchange

- TimeTamer Valencia, 09/2026

Erasmus Student Network

- Siegen, 06/2026 - Now

AIESEC International

- IGV Department Eskişehir, 2017-2022

PROFESSIONAL EXPERIENCE

06/2023 – 08/2025

EMBEDDED SYSTEMS DESIGN ENGINEER ON CONTRACT

The Secretariat of Defence Industries, Republic of Türkiye

- Engineered bare-metal C/C++ firmware for ARM Cortex STM32 and PIC microcontrollers.
- Developed custom peripheral drivers (SPI, I2C, UART, ADC) for direct hardware interfacing.
- Implemented real-time control algorithms, including highly responsive PID control loops.
- Programmed and debugged embedded systems using STM32CubeIDE, MPLAB X IDE, and Keil µVision.
- Optimized software architecture for low power consumption and strict memory constraints.

03/2023 – 06/2023

EMBEDDED SYSTEMS HARDWARE INTERN

SDT Space and Defense Technologies Inc. - Ankara, Türkiye

- Designed schematics and multi-layer PCBs for ARM Cortex STM32 and PIC based architectures.
- Selected components and managed Bill of Materials (BOM) to optimize system cost and performance.
- Engineered power management circuits and battery systems for low-power embedded devices.
- Routed communication interfaces (SPI, I2C, UART) ensuring strict signal integrity and EMI/EMC compliance.
- Validated hardware prototypes using oscilloscopes, logic analyzers, and functional testing.

04/2022 – 10/2022

IT TECHNICIAN

Interlochen Center for the Arts - Michigan, The USA

- Maintained and administered IT systems
- Setup and managed user accounts
- Analyzed and resolved technical issues
- Provided IT support to employees and students
- Documented IT processes