

# Enver Gökay ÇAY

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## Education

Karadeniz Technical University, Electrical Electronics Engineering (100% English)

2020 – 2025

- GPA: 2.85/4.0

## Projects

### STM32F417 Demo Board

- Designed a multi-purpose demo board based on the STM32F417VGT6 microcontroller.
- Integrated industrial communication protocols (CAN, RS232, RS422, Ethernet) into the board design.
- Incorporated a power management circuit, USB-FTDI converter, and I2C-based LCD display interface.
- Placed expandable GPIO ports and peripherals (SPI, I2C, UART) on the board layout.
- Developed schematic and PCB design stages using Altium Designer.

GitHub Project Link: <https://github.com/envergokaycay/STM32-Demo-Board>

### Wireless Charging System Design for Electric Vehicles (Capstone Project)

- Developed a prototype capable of wireless power transfer for electric vehicle charging.
- Designed a DC-AC inverter using the H-Bridge topology.
- Controlled the H-Bridge inverter circuit by generating PWM signals with Arduino Uno.
- Drafted the system design in KiCad and conducted simulation studies in LTspice.

GitHub Project Link: <https://github.com/envergokaycay/h-bridge-dc-ac-inverter>

### AI-Based PCB EMI Signal Integrity Fault Detection

(Oct 2025 – On Going)

- Developing an AI-based system to detect EMI and Signal Integrity problems in PCB designs within the scope of Samsung Innovation Campus.
- Created a custom dataset consisting of defective/defect-free images and processed it in Roboflow for model training.
- Continuing accuracy optimizations of the model using the YOLOv8 architecture for defect detection.

GitHub Project Link: <https://github.com/envergokaycay/ai-pcb-emi-signal-integrity>

## Technical Skills

**Design & Simulation:** Altium Designer, KiCad, LTspice, MATLAB & Simulink

**AI & Tools:** Python, YOLOv8, Roboflow

## Experience

### Intern Engineer, Beta Enerji ve Teknoloji A.Ş. – Adana

Jul 2025 – Sep 2025

Took an active role in the production, assembly, and testing processes of medium voltage switchgear. Performed mechanical assembly, control panel cabling, and transformer installations. Conducted post-production 70 kV high voltage, resistance, and functional tests. Additionally, supported the work organization of a 15-person production team and weekly production planning.

### Intern Engineer, Çukurova State Hospital – Adana

Aug 2023 – Sep 2023

Supported maintenance, repair, and calibration processes of medical devices. Participated in monitoring electrical distribution panels and power systems, as well as fault detection and resolution activities.

## Certificates

- PCB Basic Design Course, Altium Education (2025)
- Electronic Circuit Board Design with Altium Designer, Udemy (2025)