

# Enver Gökay ÇAY

✉ envrcy@gmail.com | ☎ +90 507 027 38 99 | in envergokaycay | 🌐 envergokaycay

## Education

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

2020 – 2025

## Projects

### STM32F417 Demo Board

- **Design:** Ensured **Signal Integrity** on high-speed lines by utilizing **differential pair** routing and **impedance control** on the PCB designed in **Altium Designer** adhering to **IPC-2221** standards.
- **Hardware Architecture:** Integrated power management and communication interfaces like **RS232/422** along with **SPI, I2C, UART** peripherals on a single board, adhering to **EMI/EMC** principles.

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

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

- **Power Electronics Design:** Designed and prototyped an **H-Bridge based DC-AC inverter** circuit to generate the high-frequency AC signal required to drive the wireless power transfer coil.
- **Simulation & Control:** Simulated inverter switching analysis using **LTspice**, designed the PCB in **KiCad**, and implemented **PWM** control via Arduino UNO.

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

## Technical Training

### High Frequency Electromagnetic Analysis Training | Numesys

- Designed and optimized a **2.4 GHz PIFA antenna** for smart systems and communication using **Ansys HFSS** (**4.01 dBi gain, -34.2 dB S11**).
- Conducted **3D electromagnetic analyses** and **EMI simulations** of high-speed circuit structures.

🔗 Project Link: <https://github.com/envergokaycay/2.4GHz-PIFA-Antenna>

### AI-Based PCB EMI Defect Detection System | Samsung Innovation Campus

- Developed an AI model detecting PCB EMI/SI design defects with **93% accuracy**. (**YOLOv8, Python**)

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

## Technical Skills

- **Design & Simulation:** Altium Designer, KiCad, Ansys HFSS, LTspice, MATLAB & Simulink
- **Languages:** Turkish (Native), English (Upper Intermediate)

## Experience

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

Jul 2025 – Sep 2025

Performed the assembly of medium-voltage switchgears, panel wiring, and transformer installations; completed 70 kV high-voltage and functional tests. Contributed to the production planning of a 15-person team.

**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

- ELE 101 - Introduction to Ansys HFSS, Numesys (2026)
- Altium Designer - PCB Basic Design Course, **Altium Education** (2025)
- Samsung Innovation Campus - Artificial Intelligence Course, **Samsung** (2026)