

Enver Gökay ÇAY

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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 (Ongoing)

- Ongoing applied studies in **Ansys HFSS** environment on **3D electromagnetic analysis** of **Antenna, RF Filter**, and **High-Speed Circuit** structures, along with **TDR** and **EMI simulations**.

🔗 Project Link: <https://github.com/envergokaycay>

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 mechanical assembly, panel cabling, and transformer installations of medium voltage switchgear cells; completed 70 kV high voltage and functional tests. Supported production planning and work organization for 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)