

Halil İbrahim Çetin

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About Me

I am a senior student in the Electronics and Communication Engineering department at Kocaeli University. I am passionate about aviation and engineering. I have successfully completed many projects in the fields of Embedded Systems and the Internet of Things (IoT). I strive to continuously improve myself and have participated in numerous projects related to IoT and embedded systems so far.

SKILLS

- | | | | |
|----------|---------------------------|--------------|--------------------|
| • C | • MQTT | • Altium | • Linux |
| • C# | • Internet of Things(IoT) | • SolidWorks | • Machine Learning |
| • Python | • HTML / JS / CSS | • Android | • Image Processing |

EXPERIENCE

ITEP Innovation

August 2025 - October 2025

Software Developer

- I developed control interfaces for Unmanned Surface Vehicles (USV) using Qt for ASELSAN. I worked on a real-time camera data display interface by integrating hardware and software components to ensure the reliable operation of autonomous marine vehicles. I gained practical experience in GUI development and system integration subjects in defense technology projects.

Turkish State Railways Technical Inc.

August 2025 - September 2025

Intern

- During my internship, I worked on industrial automation projects and gained direct experience in the design, programming, and maintenance of control systems. I implemented Modbus communication protocols for various automation devices, performed system diagnostics, and contributed to the optimization of operational efficiency. This experience allowed me to improve my technical skills in electronics, embedded systems, and industrial automation while working in a professional engineering environment.

Doğuş Media Group

July 2025 - August 2025

Intern

- I completed my internship in the Measurement - Maintenance department. During this period, I performed the repair of various electronic broadcasting equipment, as well as the design and installation of many broadcasting systems. In addition to this, I gained detailed information about communication in television broadcasting.

Ahter Aviation Team

July 2023 - November 2025

Team Lead

- It is a technology team that I founded in July 2023 within the scope of the #MilliTeknolojiHamlesi with the aim of developing an unmanned aerial vehicle, which is one of the projects that will add value to our country. As the team captain, I am actively working in the fields of avionics and software.

Lavira Rocket Team

September 2021 - February 2023

Technical Team Member

- Within the Lavira Rocket Team, we qualified to participate in the final organized at Aksaray Hisar Firing Range by successfully passing all report stages in the TEKNOFEST 2022 Medium Altitude Rocket Competition. I was responsible for avionics and mechanical production in the team.

EDUCATION

Kocaeli University

2021 - Still

Bachelors , Electronic & Communication Engineering

Behçet Canbaz Anatolian Highschool

2016 - 2020

Highschool

CERTIFICATES

Software Test and Automation
BTK Akademi

TEKNOFEST 2022 Rocketry Competition Finalist Degree
TEKNOFEST

Network Security
Siber Kulüpler Birliği

Technical Academy Program
NOKIA

Volunteer Certificate - TEKNOFEST
TEKNOFEST

UAV Construction and Training
Udemy

Introduction to Artificial Intelligence
SatuEdu Foundation

Rocket Competition Training Program
SatuEdu Foundation

UAV-1 License
Directroate General of Civil Aviation

Introduction to Internet of Things
Stanford University

Python & Tensorflow for Data Science
BTK Akademi

C Programming
Udemy

PROJECTS

IoT Based Web Interface Controlled Smart Fire Truck

It is a smart fire truck system developed within the scope of my graduation project, which can be controlled via a web interface. The communication between the web page and the Raspberry Pi 5, which is the main computer of the vehicle, is provided through an MQTT broker that I set up on a VPS. The vehicle chassis and electronic component holders were designed by me using SolidWorks and produced on a 3D printer. The camera feed was transmitted in real-time via Owncast running on the VPS.

C# Based Smart Home Control System Application and Design

It is a smart home systems control interface and smart home design project developed within the scope of the C# course. In the project, a connection was established between the smart home and the interface using MS SQL and MQTT, and a Python-based system running on Raspberry Pi 4 was designed for the smart home. The system displays the data received from the sensors located in a home instantly on the interface and ensures that the necessary functions can be controlled remotely by the user (Open/close door, adjust Light Level, etc.).

IoT Based Automobile Control and Tracking Application

This project was developed within the scope of the "Engineering Design 3" course and includes the creation of an IoT-based vehicle control and tracking system. The computer on the vehicle is Raspberry Pi 5, and the communication with the components was written in Python. The user interface was designed and developed for Android using Android Studio and Java. The communication between the vehicle and the user is provided over the MQTT protocol.

IoT Based Remote Controllable Robot Arm Design

It was developed using Raspberry Pi 4 in order to gain experience on Linux systems within the scope of the "Engineering Design 2" course. The servo motors used in the three-axis robot arm receive PWM signals via Raspberry Pi. Data is sent wirelessly from a Python-based interface created with the tkinter library. Additionally, the movements of the robot arm are visualized in real-time on the Cartesian coordinate system using the matplotlib library.

IoT Based Weather Tracking System

In this IoT project developed within the scope of the "Engineering Design 1" course, temperature, humidity, and rain sensors were used with ESP32. Sensor data was displayed and visualized in real-time on a local website created using HTML, Bootstrap 5, and JavaScript by using Firebase. This work contributed to my gaining experience in C and C++ languages and understanding the working logic of database systems better.

Predicting the Condition of Traffic Signs Using Supervised Machine Learning

It was realized within the scope of the "Machine Learning" course and aims to predict the conditions of traffic signs according to their reflectivity values, which is the subject of an academic paper. Methods such as ANN, SVM, and RFC were used in the project; metrics such as Accuracy, Precision, Recall, and F1-Score were compared to determine the most suitable prediction.

Real-Time Drone Detection and Tracking System

It was developed within the scope of the "Computer Vision" course and includes training a model using a dataset consisting of 1100 photos. After optimization, the model was made capable of performing real-time drone detection from images.

Vehicle Tracking Application from MOBESE Footage with MATLAB

It was developed within the scope of the "Image Processing" course and image processing studies were carried out using MATLAB instead of Python in order to gain program experience. Within the scope of the project, vehicles found in the MOBESE data are recognized and marked.

RFID Card Reader System Design

It was developed within the scope of the "Microprocessors" course and MSP430G2553 and RC522 RFID reader were used. The system was designed to ensure that an LED turns on when a defined card is read. This work contributed to my gaining coding experience with Assembly and C and being able to perform circuit design and implementation using Altium.

220V-15V DC Power Supply

It was developed within the scope of the "Introduction to Engineering Applications" course. It has 220V AC input and 0-15V adjustable DC output. I designed and produced the PCB design using the Altium program; this process enabled me to gain experience in circuit design.

Merküt Medium Altitude Rocket

It is a 352 cm long medium altitude rocket study developed by the Lavira Merküt Rocket Team within the scope of TEKNOFEST'22. The team successfully completed all report and test stages and qualified to become a finalist.