Alperen Haydar Işık – 22

PORTFOLIO

Electrical and Electronics Engineering Student

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EXPERIENCE

BMT HidroCar Technology Team - Team Leader (2022 – Currently)
I worked on PCB design and production, microprocessor software, hydrogen fuel cell electrical energy generation, team and project management.

ISKI Electronics and Communication Department – Intern (2023)
Participated in electronic card repair, system troubleshooting, and installation of audio and video systems.

Istanbul Medeniyet University Health, Culture and Sports Department – Part Timer (2021 – 2022)
Involved in setting up, maintaining, and repairing audio-video equipment and systems.

EDUCATION

Istanbul Medeniyet University – Electrics and Electronics Engineering (2021 – Currently)

Halic University – Computer Engineering (2020 – 2021)

SKILLS

Hardware Design and Simulation (Altium Designer, KiCAD, Proteus, LTSpice, Simulink)

Software (C, Python, MATLAB, VHDL)

CAD Design (AutoCAD)

Microsoft Office

CERTIFICATES

PCB Design – Life Cycle of an Electronic Card (xBowtie Türkiye) (2025)

Introduction to Electronics and Robotics (BTK Akademi) (2023)

Circuit Design with Proteus (BTK Akademi) (2023)

Python Programming for Data Science (Miuul) (2022)

Borusan Technology School (Borusan) (2022)

Python Programming (Global AI Hub) (2021)

C1 English Certificate (Halic University) (2021)

LICENSES

Class B Driving License

Bicycle Athlete License

A0 UAV Pilot License

PROJECTS

Onboard Charging Unit for Electric Vehicles (Continuing)
It was made using half bridge topology with 600W-700W output power working with 220AC mains voltage. STM32F446RE processor development board was used. It has CAN BUS and UART communication. It is a graduation project and TEKNOFEST 2025 project.

Wi-Fi Security System
It works with 220AC mains voltage. When the sensors detect motion, it turns on the lamp. It also warns the user via Wi-Fi. STM32F103C6T6A processor is used.

STM32 Development Board
The development board was designed using the STM32F103C8T6 processor.

ESP32 Development Board
The development board was designed using the ESP32-S3-WROOM-1-N4 Wi-Fi module.

Image Processing Based System That Increases Flight Safety by Monitoring Pilots' Alertness, Heart Rate and Respiration
Awakening and breathing control are performed with image processing, and pulse control is performed with piezoelectric materials. Wi-Fi communication is performed in case of warning. It is a TUBITAK 2209 project.

Insulation Monitoring Device for Hydrogen Fueled Vehicles
A system that detects electrical leaks in the vehicle and gives a warning was made. It has CAN BUS communication. It is a TEKNOFEST 2024 project.

Fixed Wing UAV Carrying Medical Supplies
A manually driven and autonomous UAV that drops medical supplies to the hospital roof in emergency situations was designed and produced. It is a TEKNOFEST 2024 project.

Hydrogen Fueled Rubber Wheeled Urban Rail Transport Vehicle
An electric motor train powered by a hydrogen fuel cell has been designed. It is a TUBITAK 2242 project.

İletken E-Dergi
A website has been created where public science and technology content is published.

REFERENCES

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