EKREM TURAN FIRAT

Undergraduate Researcher
Ankara / Sivas, Türkiye
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Education

Erasmus+ Exchange Program | Electrical Engineering | AGH University of Science & Technology | Krakow, Poland
2025 – 2026

Bachelor's Degree in Electrical and Electronics Engineering | Cumhuriyet Üniversitesi | Sivas, Türkiye
2024 – Ongoing

Electrical-Electronics Technology Technical Degree | Cezeri Green Technology Vocational and Technical High School | Ankara, Türkiye
2020 – 2024

Experience

Undergraduate Researcher | METU Power Lab | Ankara/Sivas(Hybrid), Türkiye
February 2025 – Ongoing

- Working within the laboratory on the design of power electronics systems, such as TI C2000-controlled low-inductance motor drivers, for TÜBİTAK and industrial institutions.

Committee Chairman | IEEE SCÜ Student Branch | Sivas, Türkiye
November 2024 – Ongoing

- I served as the chairman of the PELS (Power Electronic Society) Committee.
- Participated in international symposiums.

Electronic Design Intern | Robolink Teknoloji | Ankara, Türkiye
March 2022 – August 2022 | June 2023 – August 2023

- I took part in PCB designs for sale on topics such as Laser CNC controllers, Stepper Motor Drivers, Pulse Generators, ESP32.
- Competencies such as SMD Soldering, Oscilloscope Usage, PCB Testing stages were acquired.

Founder | Mergen Elektronik | Ankara, Türkiye
June 2021 – Ongoing

- Personal project sharing platform | mergenelk.com

Projects

PL Driver Evaluation Board| METU Power Lab
July 2025 – Ongoing

- Embedded Motor Driver Design for a PCB Motor with a Cycloidal Gear Design, As part of the TÜBİTAK 1001 project, I am working on the design of a 250-watt, low-phase induction TI C2000 series DSP-controlled miniature motor driver.

PL Driver Evaluation Board Design | METU Power Lab
February 2025 – July 2025

- As part of the TÜBİTAK 1001 project, I participated in the design of a 500-watt motor driver with extensive communication protocols and peripheral connectivity.

Rocket Flight Control Computer | Alpina Roket
December 2024 – February 2025

- I designed a flight control computer based on STM32F411CEU6 microcontroller on a 6-layer PCB to be used for the operational needs of a rocket.
- Project Documents

Switched Power Supply Design (SMPS) | Mergen Elektronik
June 2024 – October 2024

- I designed a power supply with a 150Watt AC-DC 0-30V output range on a 4-layer PCB.
- Project Documents

ESP32 Based Laser CNC Motherboard | Robolink Teknoloji
June 2023 – August 2023

- I designed PCBs for ESP32 based Laser CNCs compatible with GRBL software on 4 layer PCBs.

Stepper Motor Driver | Robolink Teknoloji
March 2022 – July 2022

- I designed a PCB for stepper motor control and testing on a 2-Layer PCB without requiring software or an external controller.
- Project Documents

ESP32 Developing Board | Robolink Teknoloji
August 2022

- I was involved in the design of the ESP32 development board designed for testing ESP32 based applications on a 2 Layer PCB within the company.
- Project Documents

Memberships & Organizations

Institute of Electrical and Electronics Engineers(IEEE)

- Student Member
- Power Electronic Society(PELS) Student Member

3. International Energy Days | Artificial Intelligence Symposium in Energy | SCÜ 100. Yıl Kültür Merkezi
December 2024

- I worked as a technical team member and stand attendant in the organization.

Language Skills

English

- Listening: B1 | Reading: B2 | Speaking: B1 | Writing: B2
- Sivas Cumhuriyet University Erasmus Language Exam:
    - Written Exam: 86/100
    - Oral Exam: 70/100

Digital Skills

- Altium Designer
- Autodesk EAGLE
- KiCad
- Proteus
- Fusion360
- AutoCAD
- LTspice
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