

BURAK ORHAN

Electrical and Electronics Engineer

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Electrical and Electronics Engineering graduate with academic project experience in embedded systems integration, analogue electronics, power conversion and RF/microwave analysis. Background in hardware prototyping, MATLAB/Simulink modelling, HFSS simulation and technical reporting, supported by early robotics projects and an industrial internship.

Seeking master's studies connecting AI with semiconductor and microelectronic technologies, embedded systems, robotics and cyber-physical systems. Further interests include electromagnetics, RF/microwave engineering, signal processing, communication networks, brain-computer interfaces, neural engineering and computational biology.

EDUCATION

Bahçeşehir University | B.Sc. in Electrical and Electronics Engineering

2021-2026 | Graduated July 2026 | Full scholarship | 100% English-medium program

Bahçeşehir University | Undergraduate Studies in Management Engineering

2019-Summer 2021 | Full scholarship | Transferred to Electrical and Electronics Engineering in 2021

ENGINEERING EXPERIENCE

Engineering Intern | Ethos Enerji İç ve Dış Tic. Ltd. Şti.

Istanbul | Summer 2025 | Explosion-proof panels and industrial energy solutions

- Prepared AutoCAD drawings for junction boxes and industrial panels; reviewed ATEX requirements and explosion-proof component datasheets.
- Assisted with drilling, assembly, panel testing, quality control and technical documentation.

ENGINEERING PROJECTS

Dual-Axis Solar PV Tracking Prototype | 2025-2026

Capstone Project I & II | EEE4991 / EEE4992

- Served as Project Director across both phases, overseeing project workstreams, coordinating team activities and reviewing progress and subsystem integration.
- Oversaw requirements, hardware selection and control-system integration; supported Arduino/ESP32 integration, sensor evaluation and subsystem troubleshooting.
- Planned dashboard and telemetry architecture: Arduino USB-serial data transfer, backend parsing, browser visualisation and engineering logs.

Substrate Effects on Microstrip Filter Performance | Jan 2026

Microwave Theory and Techniques | EEE4713

- Collaborated on an HFSS simulation study of a five-stage stepped-impedance microstrip low-pass filter using FR4, Rogers RO4003C and RT/duroid 5880 substrates.
- Analysed S11/S21, cutoff frequency, matching bandwidth and stopband behaviour; contributed to results interpretation and technical reporting.

Coupled-Inductor High-Gain SEPIC Converter | 2026

Power Electronics in Energy Systems | EEE4440

- Designed and simulated a PV DC-DC converter in MATLAB/Simulink (target: approximately 70 V, 2 A); contributed to topology, calculations, component selection, gate drive, sensing and control.

ENGINEERING PROJECTS (CONTINUED)

Yagi-Uda Antennas: Classic and Modern Designs | May 2025

Antenna and Wave Propagation | EEE4714

- Co-authored a literature review covering parasitic-element coupling, directivity, gain and bandwidth trade-offs, and modern millimetre-wave, reconfigurable and broadband antenna approaches.

Analog Amplifier Circuit | 2024-2025

Electronics I | EEE3115

- Contributed to design, assembly and laboratory evaluation, including transistor biasing, thermal considerations and electrical measurements.

LDR-Based Light/Dark Indicator with LED Driver | 2025

Electronics II | EEE3116

- Designed and assembled a light/dark indicator using an LDR, NPN transistor switching and a power LED.

TECHNICAL SKILLS

Programming & web: C, C++, Python, HTML, CSS; Git/GitHub fundamentals.

Engineering tools: MATLAB/Simulink, Ansys HFSS, Proteus, AutoCAD, Arduino IDE, mikroC.

Embedded systems: Arduino Mega, ESP32; UART, I2C, USB serial; sensors, GPS/RTC, encoders and stepper motor interfaces.

Electronics & power conversion: Analog/digital circuits, transistor switching, LED drivers, DC-DC converter modelling, circuit prototyping, test and measurement.

RF & electromagnetic analysis: Microstrip filter simulation, S-parameter interpretation, substrate comparison and antenna literature analysis.

Project coordination & reporting: Team coordination, subsystem integration review, technical literature research, simulation-results analysis and English technical documentation.

ADDITIONAL WORK EXPERIENCE

Design, Production and Sales Support Assistant | Bianca Beauty

Antalya region | Sep-Oct 2026

- Created serum labels, packaging and box designs, product visuals and a brand logo; supported ingredient mixing, bottle filling, pump/cap fitting and packing.
- Assisted with wholesale sales and distribution to retailers in the Antalya region, including Kemer and Manavgat.

Web Development Trainee | Arenatürk

Antalya | Jun-Sep 2020

- Worked on HTML/CSS frontend tasks; received supervisor-led training in backend fundamentals and development workflows.

Retail Sales Associate | Sanat Bijuteri Aksesuar

Eminönü, Istanbul | Feb-Mar 2020

- Handled in-store sales and customer communication; sourced merchandise from local wholesalers, gaining retail and wholesale trading experience.

EARLY ROBOTICS & UNIVERSITY ACTIVITIES

Robotics | 2017-2018: Participated in MEB mini-sumo robot (Konya, 2017) and RC drone (Sivas, 2018) projects, contributing to construction and mechanical/electronic integration.

Sociology Club: Suggested weekly discussion topics on Turkish and global sociological issues; proposed a guest lecture by a BEMTEG co-founder on combating addiction.

Literature Club: Weekly book discussions and cultural visits. **Science Fiction and Fantasy Club:** Gaming events. **Other activities:** IEEE Student Branch; Management Engineering Club.

LANGUAGES

Turkish (native) | English (advanced) | German (basic) | Italian (beginner)