

# Mustafa Tümöklü

Final-Year Electronics and Communication Engineering Student · Long-Term Internship Candidate

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## SUMMARY

Final-year Electronics and Communication Engineering student at Istanbul Technical University with internship and project experience in RF and antenna design, FPGA-based digital design and wireless communication systems. Seeking a long-term internship in these areas.

## EDUCATION

**Istanbul Technical University** — B.Sc. Electronics and Communication Engineering 2022 – May 2027  
Relevant courses: RF/Microwave Communication, Active Microwave Circuits, Digital Filters and Systems, Data Communications **GPA: 3.00 / 4.00**

## EXPERIENCE

**Engineering Intern — TÜBİTAK BİLGEM-TÜTEL** Sep 2026 · Gebze, Kocaeli

- Designed FIFO, adder, counter and UART modules in Verilog; synthesized them in Vivado and Quartus and tested them on a DE1-SoC FPGA board.
- Carried out the full FPGA design flow, from RTL design and synthesis to on-board verification, according to assignment specifications.

**Intern — Enerjisa / Toroslar EDAŞ, SPARK Young Talent Program** Jul – Aug 2026 · Adana

- Worked in a project team developing software that automates relay coordination, reducing a labor-intensive manual task to seconds.
- Supported teammates from other departments on circuit theory and data structures; gained field knowledge of distribution systems and protection coordination.

## PROJECTS

**ESP32-Based Shortwave DRM Receiver** — Graduation project 2026 – 2027 · ongoing

- Low-cost, compact Digital Radio Mondiale receiver built around the CML Micro DRM1000 module and an ESP32; decoded text messages are shown on a display.
- Responsible for the shortwave antenna, the antenna buffer amplifier and the RF front-end design.

**0.5–3.5 GHz Vivaldi Antenna for Medical Imaging** — Course project CST Studio Suite

- Designed and simulated an 18×18 cm wideband Vivaldi antenna in CST Studio Suite.

**5G NR Handover Optimization** — Data Communications (EHB 415E) 2026 · ongoing

- Investigating the effect of TTT and hysteresis on ping-pong handovers, handover failures and throughput in a multi-cell 5G NR network using ns-3 (5G-LENA), and developing velocity-aware adaptive handover logic.

**RF Link Design** — RF/Microwave Communication 2026 · ongoing

- Link budget analysis and system design for a wireless RF link.

## TECHNICAL SKILLS AND LANGUAGES

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|-----------------------------|----------------------------------------|
| RF / Antenna                | CST Studio Suite, MATLAB               |
| Digital design              | Verilog, Vivado, Quartus, DE1-SoC FPGA |
| Communications / Simulation | ns-3 (5G-LENA)                         |
| Programming and embedded    | C++, ESP32                             |
| Languages                   | Turkish (native), English (B2)         |