Kayra Sarı

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Education

TED Ege College Aydin, Turkiye

GPA: 99,98. LGS: Top 0,15% *Sep. 2022 – June 2026*

- Awarded 80% Merit-Based Scholarship for academic excellence.
- Awarded the Ministry of National Education Certificate of High Distinction.

Experience

Engineering Intern Jan. 2026

AZR Engineering *Izmir, Turkiye*

- Contributed to the ZeyBack mission platform by developing navigation control scripts in NumPy and implementing path-planning algorithms for obstacle avoidance.
- Utilized SolidWorks for 3D chassis modeling and performed center-of-mass calculations and resonance frequency analysis to optimize structural stability.
- Programmed ultrasonic sensors via Arduino IDE, debugged hardware using multimeters, and executed field tests to optimize battery duty cycling and response times.

Engineering Intern Aug. 2025 - Sep.2025

UKASIS A.S. *Izmir, Turkiye*

- Operated column drills and specialized marking tools for high-tolerance fabrication in the rail and commercial vehicle sectors, ensuring exact component fitment.
- Assisted in MIG/TIG welding preparation and performed sub-assembly using torque-specific mechanical fasteners and industrial adhesives.
- Conducted dimensional tolerance verification using calipers and maintained detailed QC logs to ensure strict adherence to engineering blueprints and industrial standards.

Projects

CommunicaTED | *Particle Physics, Python, Data Acquisition* Nov. 2024 – March 2025

- Proposed and designed a novel telecommunication system utilizing the natural flux of atmospheric cosmic ray muons for binary data transmission.
- Engineered a modulation system using Helmholtz Coils to generate a 0.119T magnetic field, achieving a calculated 1.106cm muon deflection over a 4-meter path.
- Developed a Python-based simulation to calculate cyclotron motion radii and deflection drifts across varying momentum distributions.
- Designed a binary readout system using scintillators and Threshold Cherenkov detectors to veto hadron contamination and ensure signal accuracy.

Excalibur WMI Driver | *C, Linux Kernel, WMI, Git* Aug. 2025 – Present

- Developed a custom Linux kernel module to enable hardware feature controls on Excalibur laptops.
- Implemented low-level communication between the GNU/Linux OS and hardware firmware via the Windows Management Instrumentation interface.
- Published as an open-source project on GitHub, managing version control and kernel compatibility.

International Masterclass in Particle Physics | *IPPOG / CERN* April 2025

- Selected to participate in an intensive program focused on experimental particle physics and data analysis.
- Performed hands-on analysis of real Large Hadron Collider data to identify elementary particles and calculate physical properties.

Technical Skills

Tools & Programming: AutoCAD, SolidWorks, MATLAB, Simulink, C, Python, Javascript, HTML/CSS
Industry Knowledge: Quality Control, Manufacturing Processes, Innovative Manufacturing
Physics & Research: Particle Physics, Experimental Design, Data Visualization, Data Analysis, Statistical Algorithms
Language: IELTS Academic 8.5, TELC Deutsch A2