

YUSUF ÜVEYİK

Electrical & Electronics Engineering Student | Embedded AI & EEG/BCI Researcher

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PROFILE

Final-year BSc student in Electrical & Electronics Engineering at Marmara University, with a concurrent double major in Computer Engineering. Currently a research intern at the Health Informatics Laboratory of Yıldız Technical University, working on EEG-based early diagnosis of Alzheimer's disease; previously a visiting researcher at the University of Trieste (Italy) on EEG-based brain-computer interfaces. On the hardware side, I have hands-on industrial experience deploying TinyML models on STM32 and nRF5340 platforms.

EDUCATION

BSc, Electrical & Electronics Engineering <i>Marmara University, Faculty of Technology — Istanbul, Türkiye</i>	2023 – 2027
BSc, Computer Engineering (Double Major) <i>Marmara University, Faculty of Technology — Istanbul, Türkiye</i>	2024 – 2028

RESEARCH EXPERIENCE

Research Intern (Workplace Training) <i>Health Informatics Laboratory (Hi-Lab), Yıldız Technical University — Istanbul Supervisor: Assoc. Prof. Görkem Serbes</i>	September 2026 – Present
Collecting EEG recordings from Alzheimer's patients in a hospital setting for the laboratory's project on early-stage Alzheimer's diagnosis from olfactory-triggered EEG (connectivity and time-frequency analysis).	
Visiting Researcher (Research Intern) <i>WavesLab, Università degli Studi di Trieste — Trieste, Italy Supervisor: Prof. Giulia Cisotto</i>	July – September 2026
- Benchmarked motor-imagery classification pipelines with MOABB; measured classification performance under 5-fold cross-validation (Cho2017 dataset). - ERD/ERS feature extraction with trial-wise normalisation; compared Random Forest and SVM classifiers on CSP-based features. - Built two live BCI demos (SSVEP and alpha-rhythm games) and ran them for visitors at the lab's Trieste Next science festival stand.	
Undergraduate Researcher <i>Marmara University — Istanbul, Türkiye</i>	October 2025 – Present
- GAN-based data augmentation to generate synthetic EEG signals from stroke-patient recordings (PyTorch). - Built the preprocessing pipeline in MNE-Python: raw EEG filtering, epoch segmentation and preparation for model training.	

PROFESSIONAL EXPERIENCE

Embedded AI Engineer (Project-Based) <i>Tibcon Energy Technologies Inc. — Istanbul, Türkiye</i>	October 2025 – April 2026
- End-to-end AI pipeline for time-series forecasting: trained LSTM models in Keras, optimised them with X-CUBE-AI and deployed them on STM32. - Developed the embedded GUI in TouchGFX to display real-time inference results; delivered the project in fully working condition. - Presented the resulting solution within the scope of a TÜBİTAK programme.	
Embedded Software Intern <i>Vestel Health — Istanbul, Türkiye</i>	July – September 2025
- RTOS-based embedded development on the nRF5340 DK; integrated CNN and Random Forest models onto the platform using TensorFlow Lite and the EON Compiler (TinyML). - Built Python preprocessing pipelines for respiratory-rate analysis; conducted a TinyML literature review and contributed to agile R&D processes.	

PROJECTS & ACHIEVEMENTS

Future Commerce Aldeathon — 5th place nationally (Türkiye) <i>Türkiye E-Commerce Week — Istanbul</i>	November 2025
Developed an AI-based deadstock prediction model for inventory management in 8 hours; presented the technical solution and business model to the jury.	
Emotion Recognition from Children's Drawings — Academic Research Project <i>Marmara University — Istanbul</i>	November – December 2024
CNN-based feature extraction combined with ensemble classifiers; produced a technical report and literature review.	

TECHNICAL SKILLS

Programming	Python, C, C++, MATLAB
AI / Deep Learning	PyTorch, TensorFlow, TensorFlow Lite, Keras, Scikit-learn, NumPy, SciPy, SVM, Random Forest
Signal Processing	MNE-Python, MOABB, EEG preprocessing, CSP, ERD/ERS analysis, GAN-based augmentation
Embedded Systems	STM32, nRF5340 DK, RTOS, X-CUBE-AI, EON Compiler, TouchGFX, TinyML, Altium Designer
Tools & Languages	Simulink, Agile/Scrum · Turkish (native), English (professional working)

VOLUNTEERING & INTERESTS

- TOFA (Technology Of Future Association) — Istanbul Coordinator (2025 – 2026): took part in planning events.
- Deneyap Workshops – T3 Foundation — Student 2018–2023, Volunteer 2023: robotics, electronics and AI training; participation in social-responsibility projects.
- Interests: Chess (licensed competitive player until 2019) · Archery · Creative writing.