

# Abdelrahman Elmorsi

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Control Automation Engineering student at YTÜ specializing in AI-driven full-stack development, ICS/OT security, and robotics. Co-Founder Technical Lead of an EdTech startup, with a proven track record of building real-time AI architectures, robust embedded systems, and scaling multi-national engineering communities.

## EDUCATION

- Yıldız Technical University (YTÜ)** Istanbul, Türkiye  
*B.Sc. in Control and Automation Engineering* Oct 2023 – Present

## TECHNICAL SKILLS

**Core Engineering:** Control Systems, Inverse Kinematics, Embedded Systems, MATLAB, Simulink, Arduino  
**Software Development:** Python, C++, JavaScript/TypeScript, Node.js, React, React Native, Next.js, PostgreSQL  
**Cloud & Systems:** Cloudflare Workers, Serverless Architectures, KV Storage, WebSockets, Docker  
**Cybersecurity:** ICS/OT Security, Penetration Testing, Wireshark, Nmap, Metasploit, OpenPLC  
**AI & Data:** OpenCV, Random Forest, RAG Systems, LangChain, OpenAI API

## PROJECTS

- Industrial Anomaly Detection via Digital Twins | Graduation Project**
  - Developing a Digital Twin architecture to simulate and secure Industrial Control Systems (ICS).
  - Implementing real-time anomaly detection algorithms to identify and mitigate cyber-physical threats in OT environments.
- Robot Arm Ecosystem (Firmware & Mobile App) | YTÜ Yıldız Kaşifleri Grant**
  - Secured funding to engineer a bio-signal controlled robotic platform with 5-DOF motion control.
  - Trained a Random Forest classifier (94% accuracy) to decode EMG signals into real-time servo commands.
  - Built a React Native app interfacing via a Python/Serial bridge, reducing operation latency to under 100ms.
- Barrier-Free Video Accessibility | TEKNOFEST 2025 Finalist**
  - Architected a real-time system translating spoken content into 3D Sign Language animations.
  - Implemented low-latency audio streaming using WebSockets and high-accuracy speech-to-text pipelines.

## EXPERIENCE

- ManteeQ** Apr 2026 – Present  
*Co-Founder & Technical Lead* Istanbul, Türkiye
  - Architecting an AI-powered Arabic pronunciation coach that delivers sub-500ms real-time phonetic feedback and anatomical visual guidance.
  - Leading full-stack development, integrating Wav2Vec acoustic models for forced alignment with a React Native frontend via high-speed WebSockets.
  - Selected for the competitive ETKİM Yıldızları Acceleration Program to scale the MVP and optimize inference latency for edge deployment.
- YTU Arab Students Union** Aug 2025 – Present  
*Community Lead & Technical Founder* Istanbul, Türkiye
  - Designed and deployed an AI-powered RAG chatbot to automate academic and administrative student inquiries.
  - Founded the Technical Office to digitalize student services, significantly reducing operational overhead.
  - Coordinated cross-functional teams spanning student affairs, media, and event operations.
- YTÜ International Students Club** May 2024 – Jun 2025  
*Secretary General & Web Lead* Istanbul, Türkiye
  - Led a 50+ volunteer, multi-national team driving the club's digital transformation for 450+ members.
  - Built and deployed uokytu.com.tr using Astro, Cloudflare, and Decap CMS.
  - Achieved 123k+ search impressions and 1.8k+ organic clicks in under six months through SEO optimization.

## CERTIFICATIONS & ACHIEVEMENTS

- Competitive Cybersecurity & CTFs** 2024 – 2025
  - Placed **6th (2025)** and **9th (2024)** at SKYDAYS CTF.
  - Developed and deployed original Capture The Flag (CTF) challenges for live workshops and events.
  - Co-organized and instructed a university-level Cryptography workshop.
- Cybersecurity Training Program – Core Istanbul** Aug 2025
  - Completed intensive, hands-on training in penetration testing, network security, and Linux administration.