Abdelrahman Elmorsi

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Control & Automation Engineering student at YTÜ with hands-on experience in robotics, AI systems, full-stack development, and cybersecurity. Built robust embedded and cloud-based solutions, developed original CTF challenges, and led multi-national 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, SQL
Cloud & Systems: Cloudflare Workers, Serverless Architectures, KV Storage, WebSockets
Cybersecurity: Web Security, CTF Challenge Development, Network Analysis, Wireshark, Nmap, Metasploit
AI & Data: OpenCV, Random Forest, RAG Systems, LangChain, OpenAI API

PROJECTS

- **Robot Arm Ecosystem (Firmware & Mobile App)**
  – Secured funding via **YTÜ Yıldız Kaşifleri** to engineer a bio-signal controlled robotic platform.
  – Developed C++ firmware implementing Inverse Kinematics for precise 5-DOF motion control.
  – Trained a Random Forest classifier (94% accuracy) to decode EMG signals into servo commands.
  – Built a React Native app interfacing via Python/Serial bridge, reducing operation latency to under 100ms.

- **Barrier-Free Video Accessibility (TEKNOFEST Finalist)**
  – Architected a real-time system translating spoken content into 3D Sign Language animations for accessibility.
  – Implemented low-latency audio streaming using WebSockets and high-accuracy speech-to-text pipelines.
  – Developed a Chrome Extension to integrate accessibility features seamlessly across web platforms.

- **CTF Challenge Development & Platform Deployment**
  – Designed and implemented original cybersecurity challenges covering Web, OSINT, and Network attack vectors.
  – Deployed and managed challenges on CTFd for live workshops and competitive cybersecurity events.
  – Focused on realistic vulnerability chains, increasing participant engagement and learning outcomes.

EXPERIENCE

- **YTÜ International Students Club** — May 2024 – Jun 2025
  Secretary General & Web Lead — *Istanbul, Türkiye*
  – Led a 50+ volunteer, multi-national team and drove the club's digital transformation.
  – Built and deployed the official website using Astro and Decap CMS, serving 450+ members.
  – Achieved 123k+ search impressions and 1.8k+ organic clicks in under six months through SEO optimization.

- **YTU Arab Students Union** — Aug 2025 – Present
  Community Lead — *Istanbul, Türkiye*
  – Designed and developed an AI-powered RAG chatbot to automate academic and administrative student inquiries.
  – Founded the Technical Office, responsible for digitalizing student services and developing internal tools and specialized websites.
  – Coordinated cross-functional teams spanning student affairs, media, cultural programming, and event operations.
  – Improved service accessibility and reduced operational overhead through centralized, technology-driven workflows.

CERTIFICATIONS & AWARDS

- **Cybersecurity Training Program – Core Istanbul** — 2025
  – Advanced training in penetration testing, network security, and Linux system administration.

- **TEKNOFEST Achievement Certificate** — 2025
  – Awarded for finalist project in AI-driven accessibility technologies.