

Can KADILAR

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Canadian citizen (no sponsorship required) - (Relocating to Toronto - July 2026)

Summary:

Mechatronics Engineer focused on medical device and embedded systems: prototyping, assembly and test, and system integration. Built an EMG-controlled prosthetic hand (signal processing, embedded firmware, custom PCB, and mechanical design; published) and an agricultural spraying drone (full build plus optimization framework). Hands-on debugging across wiring, sensors, motors and actuators, PCBs, and Python test logging, with clear documentation.

Technical Skills:

- Programming: Python, C, C++, MATLAB
- Embedded & Hardware: ESP32, PIC, I2C / SPI / UART, PCB design (KiCad), sensor integration, motor/servo control, soldering, crimping
- Signal & Test: Digital signal processing, surface-EMG / biosignal acquisition, on-device classification (DTW), bench testing and measurement (oscilloscope, logic analyzer), design verification
- CAD & Mechanical: SolidWorks, Fusion 360, Siemens NX; drawings, assemblies, GD&T (tolerances + fits), 3D printing, BOMs
- Software & Tools: PyQt6 desktop apps, Flask PWAs, local AI/ML pipelines, multi-provider LLM integration, Git/GitHub, Cloudflare Tunnel/Access, technical documentation

Projects:

EMG Controlled Prosthetic Hand (MSc Thesis) [\[canarchive.com\]](http://canarchive.com)

- Multi-pattern surface-EMG control via Dynamic Time Warping (DTW) for on-device gesture classification: 92% accuracy at 414-644 ms impulse-to-motor latency.
- Integrated EMG sensing, ESP32 firmware, custom KiCad PCB, and DC-motor/worm-gear actuation; delivered CAD drawing package and BOM. Published in IJANSER (2024), with an extended arXiv preprint.
- Tools: Python/MATLAB, C/C++, ESP32/PIC, I2C/SPI, KiCad, SolidWorks/NX

Agricultural Spraying Drone Design & Optimization (BSc Thesis) [\[canarchive.com\]](http://canarchive.com)

- Built end-to-end: cut-and-drilled aluminum frame, custom KiCad PCB, and Bluetooth spray-control firmware on a modified RC transmitter, with a flight and spray demo.
- Developed an optimization framework evaluating coverage, payload, efficiency, and stability tradeoffs.
- Tools: SolidWorks, Python, KiCad

Work Experience:

Engineering Intern - Industrial Control Panels | EMelec, Turkey - Jun 2020

- Supported troubleshooting and uptime improvement across 30+ control panels; captured recurring issues and assisted corrective actions.
- Created and updated wiring and workflow documentation to support assembly and maintenance and reduce errors.

Engineering Intern - CNC Inspection | KepKep, Turkey | Jul - Aug 2015

- Inspected 1000+ CNC-machined parts (dimensional and post-processing); documented nonconformities and trends; helped implement a standardized inspection checklist that reduced rework and scrap.

Education:

Marmara University - Istanbul / Turkey - Mechatronics Engineering, M.Sc Graduated in 2025 (WES-verified) | GPA 3.71

Altinbas University - Istanbul / Turkey - Mechanical Engineering, B.Sc Graduated in 2022 (WES-verified)

Leadership and Teamwork:

- *Robotics Competitions:* 6th place solo; 1st place as part of a school team (50+ entries).
- *University Robotics Club President* : Showcased 5+ projects to 100+ attendees; ran 20+ participant workshops.