Abderrahmane Er-raqabi

 AbderrahmaneErraqabi | Abderrahmane Er-Raqabi | abderrahmaneer-raqabi.com |
 abderrahmane.erraqabi@gmail.com | 514-806-3430

ABOUT

Electrical Engineering student at Polytechnique Montréal with a strong focus on embedded systems, circuit design, and renewable energy technologies. Passionate about building smarter, more sustainable hardware and software systems that merge electronics, automation, and intelligent design. Active member of Esteban Solar Car team, contributing to wiring and embedded control systems.

EDUCATION

2025 – Present	**Bachelor of Electrical Engineering** — Polytechnique Montréal (Montreal, QC) *Specialization in embedded systems and electronic design. Member of the Esteban solar car team.*
2023 – 2025	**Diploma of College Studies (DEC) in Natural Sciences** — Collège Bois-de-Boulogne (Montreal, QC) *Science profile focused on physics, chemistry, and advanced mathematics.*
2018 – 2023	**High School Diploma** — École secondaire Curé-Antoine-Labelle (Laval, QC) *Concentration in science and mathematics; involvement in technology and extracurricular projects.*

TECHNICAL SKILLS

Languages	C/C++, Python, Rust, MATLAB, JavaScript, TypeScript, HTML/CSS, SQL
Tools and Platforms	KiCad, AutoCAD Electrical, Git/GitHub, STM32, Arduino, Raspberry Pi, Visual Studio Code, Linux
Frameworks and Technologies	React, Next.js, TailwindCSS, Node.js, Express, Django, Flask, PlatformIO
Engineering Software	LTSpice, MATLAB/Simulink, KiCad, AutoCAD Electrical, Fusion 360
Key Technical Skills	Circuit design and simulation, PCB design, embedded systems integration, software development, embedded control
Fields of Interest	Embedded systems, power electronics, renewable energy, robotics, instrumentation and control, interactive web development

PROJECTS

Pill Counting Automation System — Arduino, Logisim, Logic Design *2025*

- Designed a combinational and sequential logic system using flip-flops and 7-segment decoders to automate pill counting in production.
- Prototyped on Arduino to validate control synchronization between sensor and digital display.
- Documented the hardware logic and tested circuit states using simulations and sequential inputs.

STM32-Based Lighting Controller — STM32, PWM, Light Sensors, C *2025*

- Developed an intelligent controller to regulate variable-intensity lighting through STM32 microcon-

troller.

- Implemented PWM control, analog light sensor reading, and UART serial communication for dynamic configuration.

- Optimized embedded C code for real-time response and minimal power consumption.

Mini-SPICE — DC Circuit Solver — C++, Linear Algebra, Circuit Simulation *2025*

- Built a DC electrical circuit solver inspired by SPICE in C++, applying Modified Nodal Analysis (MNA) to simulate DC networks.

- Used matrix computations to solve systems of equations and generate voltage/current reports.

- [Demo link — GitHub]

RegulAI — AI-Powered Financial Regulation Analysis Platform (PolyFinances *2025* **Datathon 2025)** — AWS, NLP, Bedrock, Comprehend, React, Python

- Designed and developed during the PolyFinances Datathon 2025, RegulAI analyzes financial regulations using AWS Bedrock, AWS Comprehend, and Yahoo Finance APIs to evaluate market and portfolio impact.

- Built an end-to-end architecture integrating NLP, data enrichment, and portfolio risk visualization with AWS QuickSight.

- Developed a responsive full-stack web platform deployed on Vercel, featuring a React/Tailwind frontend and AWS-based backend.

- [GitHub Repository — RegulAI | Live Website — regul-ai.vercel.app]

Work Experience

Wiring Team — Esteban Group, Polytechnique Montréal Aug 2025 – Present

Design and implementation of the electrical network of the Esteban solar car, including harness routing, high and low voltage wiring, and integration of control and safety subsystems. Direct collaboration with the electronics team to ensure reliability and technical compliance.

Sales Manager — SoftMoc (Montreal, QC) Jun 2023 – Present

Team supervision and performance monitoring to optimize sales and customer experience. Implemented loyalty-focused initiatives and managed operations in a high-volume retail environment.

Keyholder — Bopied (Laval, QC) Jun 2021 – May 2023

Responsible for customer service, order management, and inventory operations. Contributed to training new employees and maintaining an efficient and welcoming store environment.

Certifications

WHMIS	Workplace safety and chemical handling training — *obtained in 2025.*
Respiratory Protection	Training on the safe use and maintenance of respiratory protective equipment — *obtained in 2025.*