

Lawrence Abou Karroum

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[LinkedIn Profile](#) | [GitHub Portfolio](#) | [Youtube Video Demo](#)

PROFESSIONAL SUMMARY

Dynamic and driven Mechatronics Engineer with a solid foundation in embedded systems, robotics, and software development. Adept at integrating hardware and software solutions to solve complex, real-world problems. Known for rapid learning, teamwork, and a commitment to continuous improvement. Currently seeking a challenging engineering role where my skills in automation, programming, and electronics can drive innovation and deliver measurable impact.

EDUCATION

Bachelor of Technology in Mechatronics Engineering

University of Balamand, Souk Al Gharb | Sep 2022 – July 2025

Cumulative GPA: 3.4/4.0

- Member, Research Club
- Participant, Web Development Club & Robotics Club

TECHNICAL SKILLS

- **Programming:** Python, C, C++, C#, Dart, PLC (Ladder Logic and SFC)
- **Embedded Systems:** Arduino, ESP32, Microchip PIC, Raspberry Pi
- **IoT & Networking:** MQTT, HTTP, Wi-Fi protocols, sensor integration, real-time data collection
- **Robotics & Automation:** ROS2, Lidar, SLAM, robotic navigation, autonomous systems
- **CAD & Electrical Design:** Autodesk Inventor, AutoCAD Electrical, Proteus
- **Databases:** SQLite, MySQL
- **Software Tools:** Arduino IDE, Visual Studio, VS Code, Microsoft Office Suite
- **Other:** Technical documentation, electrical installations, lab instrumentation, AI concepts

SOFT SKILLS

- Trilingual: Arabic (Native), English (Professional), French (Professional)
- Strong analytical, debugging, and problem-solving mindset
- Self-motivated, detail-oriented, and collaborative mindset
- Fast learner with high adaptability to new technologies
- Detail-oriented and highly organized

PROJECTS

Swarm Robotics System | Sep 2024 – Jun 2025

Led the design and implementation of a swarm robotics system using ROS2 and Python, with Raspberry Pi controllers, Lidar-based SLAM, and MQTT for real-time communication. Achieved high coordination efficiency in simulated environments and lab validation.

Autonomous Navigation Robot | May 2023

Developed a robot capable of obstacle avoidance and line-following using a custom controller with greyscale and ultrasonic sensors. Achieved a great navigation accuracy in varied lighting and terrain.

Secure Digital Lock System | Nov 2023 – Dec 2023

Built a secure keypad-based lock with LCD feedback using an ATmega328 microcontroller. Implemented power-saving and intrusion detection mechanisms. Tested successfully for so many cycles.

Room Ambient Monitoring System | Nov 2022

Designed an Arduino-based embedded system to monitor and improve room ambiance using DHT11 (temperature/humidity), gas, and light intensity sensors and displayed real-time data on LCD. The system ensured a safe and comfortable environment for occupants without IoT dependency. Completed 72-hour stress testing with stable performance.

See My Youtube Channel for **Videos Demo**: <https://youtube.com/@LawrenceAbouKarroum>

WORK EXPERIENCE

Web & Game Developer Intern

App Skilled, Bakaata | *Jun 2023 – Aug 2023*

- Collaborated with SEO and design teams to enhance web performance by 15%
- Delivered cross-platform game prototypes ahead of deadlines
- Automated testing procedures for faster iteration cycles
- Implemented responsive UI/UX and database integration using Firebase
- Streamlined team workflows by establishing agile development practices