Louay Marrach

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As a proactive Computer Engineering student with practical IT Technician experience and a commitment to social impact through my work with the UN Development Program, I am ready for a future role in any engineering field. My passion for technology drives me to excel in problem-solving, teamwork, and continuous innovation.

EDUCATION

Lebanese American University, BE in Computer Engineering *September 2021 – June 2026*

PROFESSIONAL EXPERIENCE

MobileArts, *Odoo Developer Intern* *June 2025– September 2025*
- Engineered a complete meeting management module within the Odoo ERP platform using Python, XML, and PostgreSQL.
- Designed the module's backend logic and database schema, and built the front-end user interface with XML.
- Implemented key features including automated email notifications for meeting updates and role-based access restrictions.

Ogero, *Network Engineer Intern* *June 2024– September 2024*
- Configured and maintained telecommunications systems, optimizing service delivery.
- Assisted in network troubleshooting and issue resolution for internet and telephony services.
- Monitored network performance, implementing optimizations to reduce downtime.

Lebanese American University, *IT Technician* *March 2023– Present*
- IT Technician with expertise in providing technical support to computer users.
- Proficient in resolving computer issues for employees in-person, over the phone, and via electronic communication.
- Skilled in assisting with a variety of computer hardware and software issues.

United Nation Development Program, *Member* *June 2023 – Present*
- Active member of the United Nations Development Program (UNDP) contributing to sustainable growth and community projects.
- Awarded the "Best Community & Impact Award" for significant contributions to community development.

TECHNICAL PROJECTS & APPLICATIONS

UN Project, *Volunteering App* *December 2023*
  Created a full app including UI and database, using: HTML & CSS, SQL, PHP, JavsScript, XAMP.

Car Plate Detection System, *MATLAB & OCR* *May 2025*
- Built a system in MATLAB to detect and recognize car license plates using Optical Character Recognition (OCR), image processing, and segmentation techniques.

Hand Gesture Recognition, *Machine Learning* *April 2025*
- Developed a full gesture classification system from raw sensor data using Python, applying preprocessing, feature extraction, and noise reduction, then training and evaluating Random Forest, SVM, and Decision Tree models with Leave-One-Out cross-validation to achieve high accuracy.

EMG-Based Prosthetic Arm, *Embedded Systems & Machine Learning* *December 2025*
- Acquired and processed EMG signals (filtering, feature extraction) and trained ML models for gesture classification, developed fully from scratch.
- Implemented real-time embedded motor control on a microcontroller to drive prosthetic arm movements.

LAU AI Agent, *Retrieval-Augmented Generation (RAG)* *December 2025*
- Built an end-to-end RAG pipeline including document ingestion, embeddings, and vector-based semantic retrieval.
- Integrated retrieved context with LLMs to generate accurate, grounded university-specific responses.

SKILLS & PERSONAL

Languages: Arabic (C2), English (C1), French (A2)
Engineering Skills: Java, Python, SQL, Assembly, VHDL, Networks, UNIX, Office Package
Frameworks: Eclipse, Quartus, MATLAB
Tools: Wireshark, CodeWarrior, ERP Systems (Odoo)