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## Education

2022-present **Bachelor of Engineering in Electrical Engineering Accredited by ABET** (expected in May 2027), **Notre Dame University – Louaize**, Cumulative GPA: 3.63/4.0; Dean's List all semesters

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## Professional Experience and Trainings

December 2025-present **International Robotics Teacher** (grades 1-12), **BrightChamps**

- Integrated IoT systems and cloud platforms (Adafruit IO, ThingSpeak, and IFTTT) to build smart homes, weather stations, and automation systems, enabling students to deploy 15+ real-time dashboards
- Guided students in building autonomous robots (humanoids, quadrupeds, and Mars rovers) using microcontrollers, and sensor (Ultrasonic, humidity,)-actuator integrations
- Taught electronics, and mechatronics concepts through projects involving transistors, PWM, and logic gates

21 June 2025 **Volunteer Trainer, International Education Association (IEA)**

- Assisted 25+ students in debugging Raspberry Pi circuits, clarifying complex and elaborating on ideas during the ComSoc Lebanon Chapter Workshop Series at Antonine University, enabling 100% workshop task completion

June 2025-August 2025 **Electrical Engineering Intern, Ain w Zain Medical Village**

- Assisted in maintaining and checking power distribution systems (solar panels, UPS units, inverters, and generators)
- Executed preventive and corrective maintenance (HVAC, lighting, phone lines, water treatment, and kitchen equipment)

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## Projects and Extracurriculars

2025-present **IEEE NDU Shouf Campus Representative**

- Connected students across engineering disciplines through IEEE events and networking initiatives, increasing student participation

2022-present **Vice President of C.O.D.E** (Community of Developers and Engineers)

- Co-led a technical club of ~150 active members, supporting collaboration, workshops and technical sessions, contributing to consistent member growth
- Handled the administrative part of the club using Agile coordination (arranged meetings and prepared their agenda and minutes)

March 2026 **FE1.1S USB HUB PCB**

- Prototyped a 4-port USB 2.0 hub using the FE1.1S controller, implementing differential pair routing and controlled impedance with matched trace lengths to ensure stable data rates and minimal EMI
- Optimized the Power Delivery Network (PDN) using ferrite bead filters, via stitching for thermal relief and SMD connector integration, resulting in a low noise, cost effective board with reliable 500mA per-port distribution

May 2025 **Smart Street Light Project**

- Designed and implemented an automated, energy efficient lighting system using PIR motion sensors and LDR photoresistors to reduce power consumption by over 60% compared to static systems
- Developed a three-mode logic controller utilizing an LM555 timer in monostable mode for timed illumination and an LM339 comparator for light-threshold detection
- Engineered a signal conditioning stage incorporating UA741 Op-Amps for amplification and Low-Pass Filters to mitigate sensor noise and prevent false triggering

April 2025 **Efficiency Analysis of Class B & AB Power Output Stages (LTspice)**

- Designed and analyzed Class B and AB push-pull stages, utilizing 2SCR/2SAR power BJTs
- Implemented diode-biasing circuits and coupling capacitors to eliminate crossover distortion and achieve zero-offset AC signals
- Conducted DC operating point and transient analyses, validating theoretical efficiency models against simulated waveforms

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## Skills

### Technical Skills:

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|-------------------|--|--|
| IoT and Embedded: | • AI (regression, classification, clustering, CNNs)        | • Microcontrollers (Arduino, Microbit, Quarky) |
|                   | • Single Board Computer (Raspberry Pi), GPIO configuration | • UART, I2C, SPI communication                 |
| Electronics:      | • Digital electronics design                               | • PIR, IR, LDR, Gyroscope, LM35DZ              |
| Tools:            | • Eagle      • MATLAB/Simulink      • PSPICE/LTSPICE       | • AutoCAD                                      |

### Soft Skills:

- Problem-solving    • Adaptability    • Leadership    • Written and oral Communication

**Languages:** Fluent in English and Arabic