

Shehab Radwan

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[LinkedIn](#), [GitHub](#), [Portfolio](#), [Leetcode](#), [Hackerrank](#)

SUMMARY OF QUALIFICATIONS

- Holder of Master of Engineering: Electrical and Computer at the University of Ottawa with GPA 3.46/4
- Holder of Bachelor of Computer Engineering with GPA (3.4/4) from Arab Academy for Science and Technology.
- Excellent communication and teamwork skills gained from extra-curricular activities.
- Research and analytical skills developed by working on group projects throughout bachelor's degree
- Native Arabic speaker, fluent in English and beginner's French

EDUCATION

Bachelor of Computer Engineering

2018 - 2024

Arab Academy for Science and Technology, Alexandria, Egypt

- Relevant courses: Senior Project I (A), Senior Project II (A+), Operating Systems (A), Computer Networks (A-), Advanced Networks (A-), Web Engineering (A-), Database systems (A-), Computer Architecture (A), Data Structure (A+), Systems Programming (A+), Microprocessors Systems (A+), Distributed & Parallel Systems (A-), Intro to Software Engineering (A), Engineering Economy (A), International Operations Management (A), Operations Research (A+), Intro to AI (A), Cyber Security (A), Computer Graphics (A), Data Acquisition Systems (A), Data Security (A-), Object-Oriented Programming (A-), Advanced Programming (A-), Digital Systems Design (A), Electronics II (A+), Electronics I (A-), Applied Programming (A+)
- GPA: 3.4/4

Master of Engineering: Electrical and Computer

2024 - 2025

University of Ottawa, ON

- Relevant courses: Professional Skills and Responsibility, Applied Machine Learning, Industry Internship, Data science Applications, Cryptographic Implementations. Technology Entrepreneurship.

RELEVANT SKILLS

Technical Skills

- Operating systems: UNIX/Linux systems
- Programming languages: Python, C (embedded software projects), Java, C#
- Version Control: Git/Github
- Containerization: Docker
- Protocols: HTTP, SMTP, FTP, TCP, UDP, IP
- Web development: HTML, CSS, SQL, React, Django, CSS, JavaScript, Fast API, SpringBoot

Communication Skills

- Served as Task Manager in a team developing an ROV for the MATE ROV 2021 competition. Reported weekly to the team leader, coordinated team meetings to monitor task progress, and effectively managed project timelines, enhancing my skills in team communication and task management

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- Authored several engineering and lab reports and conducted reviews of formal engineering documents, such as project proposals, as part of various projects completed during my bachelor's and master's degrees.

APPLIED PROJECTS

- [SIC/XE Assembler](#)
 - Developed a SIC/XE Assembler in Java as part of a Systems Programming course, achieving an A+ grade. This collaborative project involved implementing an assembler for the SIC/XE architecture, translating assembly language code into machine code. The project offered hands-on experience in low-level programming concepts and the intricacies of language translation and execution.
- **Remotely Operated Vehicle (ROV)**
 - The MATE ROV 2021 project involved designing and building a remotely operated underwater vehicle (ROV) capable of performing complex tasks in aquatic environments, such as underwater navigation, object retrieval, and real-time data transmission. The multidisciplinary team worked together to integrate mechanical, electrical, and software components, including microcontrollers and control systems, to achieve reliable underwater maneuverability and operational control from a topside station. The project highlighted key engineering challenges, such as establishing robust communication protocols, enabling video streaming for navigation and image processing, and ensuring the ROV's structural integrity for underwater functionality.
- **Metal Detector Car**
 - In this project, we designed and built a Bluetooth-controlled car equipped with a metal detector, powered by an ATmega32 microcontroller. The project required precise timer configurations to interface the metal detector sensor, allowing the car to detect metal objects in its path. This hands-on project combined wireless control and sensor integration, highlighting real-time processing and embedded system design.
- [Paint in Real Life \(PiRL\)](#)
 - In PiRL project, we developed an alternative to a traditional smartboard that allows users to draw or write on any screen using gesture controls. Our program uses a camera to detect the user's position and the target screen, enabling seamless interaction. By leveraging MediaPipe for gesture recognition and PyQt for the GUI, we created an intuitive interface that replicates real-time drawing or writing, making presentations and interactive sessions more accessible and adaptable to various environments
- [Personal Portfolio](#)
 - Developed a full-stack portfolio management system with secure admin controls for managing achievements, technologies, and project types.
 - **Backend:** Spring Boot (Java), PostgreSQL, JWT authentication, Spring Security, RESTful APIs, Docker Compose for containerized deployment.
 - **Frontend:** React.js (Hooks), Axios for API communication, local storage for JWT handling, dynamic forms, and responsive UI for CRUD operations.
 - **Features:** Secure admin login, add/edit/delete achievements with technologies and visuals, duplicate prevention, CORS-enabled API, modular service-oriented architecture.

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- **Just Blogging**

- In the Just Blogging project, I developed a full-stack application using React for the front-end and Express.js for the back-end as part of a Web Engineering class, where I earned an A-. The project involved comprehensive database design to manage blog posts, user accounts, and comments efficiently. I created RESTful APIs to facilitate communication between the front-end and back-end, ensuring seamless data flow. Additionally, I utilized React components and hooks to build an interactive and dynamic user interface, enhancing the overall user experience. This project strengthened my skills in web development and solidified my understanding of full-stack application architecture.

- **Allergy Alert – AI-Powered Symptom Assistant**

- Built a responsive full-stack web application that allows users to describe allergy symptoms or upload images for instant AI-powered advice. Integrated OpenAI's API for natural language and image understanding, enabling contextual, multi-turn conversations. Developed a FAST API backend with message history handling and a React frontend optimized for mobile and desktop. Implemented image preview, file uploads, smooth auto-scrolling chat UI, and a proof-of-concept conversation memory model while balancing API cost constraints.

- **Snake Game**

- Developed a classic Snake game in C++ using OpenGL and FreeGLUT as a Computer Graphics course project. The game features custom-drawn geometric shapes for the snake and food, keyboard controls for movement, real-time score and timer display, and collision detection for game logic. The project demonstrates skills in 2D graphics programming, animation, and event-driven design.

- **AI Research Assistant Backend Developer**

- Developed and deployed a FastAPI-based backend for an AI-powered research assistant. Integrated LanceDB Cloud for vector storage and retrieval using semantic embeddings, implemented cosine similarity search, and orchestrated GPT-4 for context-aware responses. Configured CORS for cross-origin communication, set up Nginx as a reverse proxy, and deployed on Ubuntu VPS with persistent service management via systemd.

WORK EXPERIENCE

Software Engineer

2020-2021

Pantheons, Alexandria, Egypt

- Collaborated as a member of the Software Team in the MATE ROV 2021 competition.
- Led the setup of communication between microcontrollers (Arduino, Raspberry Pi, Pixhawk) and the topside control computer for seamless ROV operations.
- Utilized various programming languages, primarily C and Python, to support development tasks.
- Employed GStreamer to implement video streaming from the ROV's camera to the topside computer, enabling smooth navigation for the pilot and supporting image processing tasks.
- Contributed to team documentation efforts, ensuring clarity and completeness

OTHER EXPERIENCE

Member of the community team

Dec 2024 –

Aug 2025

Capital Technology Network, Ottawa, ON, Canada

- Collaborate with team members to brainstorm and develop creative ideas for events.
- Plan and coordinate activities to ensure smooth execution of events and community initiatives.

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- Contribute to fostering a vibrant and engaging environment within the CTN community.
- Participate in discussions to align event objectives with community goals.

Certifications & Trainings

- **IELTS**
 - Score: 8.0/9.0 (C1), JAN 2024
- **Information Technology Institute**
 - Front-end development training — July 2022
 - Embedded Software engineering training — July 2023

Achievements

- **Getting third place in MATE ROV competition.**