Aly Rida Areslan

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PROFESSIONAL SUMMARY

Software engineer and 42 Beirut Level 12 graduate of the Architecture of Digital Technologies Program. Built a full-stack platform with clean, reusable APIs and 800+ automated tests, a concurrent C++ server, and a Unix shell. Works with C++ (OOP), Python, TypeScript, React, SQL, PostgreSQL, Redis and Docker, directing AI coding agents and verifying every change with tests.

EDUCATION

42 Beirut - Architecture of Digital Technologies Program, Level 12 (Completed) 2025 - 2026
MTI Institute - Information Technology (LT) 2026 - Present
MTI Institute - Information Technology (TS2) 2024 - 2026

SELECTED PROJECTS

SportSphere (ft_transcendence) - Full-Stack Sports Platform 2026 - Present
Python, FastAPI, Next.js, React, TypeScript, PostgreSQL, Redis, MinIO, Docker, NGINX, WebSockets

- Built a full-stack web platform with a responsive Next.js and React frontend and a FastAPI backend.
- Designed and integrated layered REST and WebSocket APIs with reusable typed models, PostgreSQL and SQLAlchemy.
- Ensured data consistency under concurrency with row locks, atomic token rotation and schema migrations.
- Deployed a multi-container Docker Compose stack with NGINX; Redis Pub/Sub for live chat, MinIO for video streaming.
- Secured access with OAuth 2.0, JWTs, Argon2 and rate limiting; tested and debugged with 800+ Pytest and Playwright tests.

IRC Server | C++, TCP/IP, Linux, Sockets, poll() June 2026

- Built a non-blocking multi-client C++ IRC server with TCP/IP sockets and a poll() event loop.
- Modeled clients and channels in object-oriented C++; implemented KICK, INVITE, TOPIC and MODE commands.

Minishell | C, Linux, Pipes, Redirections, Signals Dec 2025

- Built a Bash-like command interpreter in C to run Unix commands and handle pipes, redirections, and signals.
- Checked execution paths for memory leaks and invalid frees using Valgrind.

TECHNICAL SKILLS

Languages: C, C++ (OOP), Python, TypeScript, JavaScript, SQL, Bash, HTML, CSS, SCSS

Frameworks, Databases & APIs: FastAPI, React, Next.js, REST APIs, API Design, WebSockets, PostgreSQL, SQLAlchemy, Redis, MinIO, OAuth 2.0, JWT, Argon2, Rate Limiting

Systems & DevOps: Linux, Docker, Docker Compose, NGINX, Microservices, Distributed Systems, Concurrency, Multithreading, Server Administration, Git

Networking & Cybersecurity: TCP/IP, Client-Server Sockets, Nmap, Wireshark, Firewalls, ARP Spoofing, SQL Injection, Reverse Engineering, OTP

Testing & Debugging: Pytest, Playwright, Postman, Jira, API Testing, Code Review, AI Coding Agents (LLM), Valgrind, Memory Management

TECHNICAL EXPERIENCE

42 Beirut | Architecture of Digital Technologies Program 2025 - 2026

- Completed 30+ software projects, including object-oriented C++ (Modules 00-09), systems and networking work, through independent development and team collaboration.
- Used Git on team projects and supported peers with debugging during hackathons and campus activities.
- Scored 100/100 on Exam Ranks 02-06 and passed three peer code reviews (evaluations) for each project.
- Completed eight cybersecurity projects in the December 2025 Piscines, covering ARP spoofing, SQL injection, malware, reverse engineering, Tor and OTP.

CERTIFICATIONS & ACHIEVEMENTS

- UJAM Lebanon Robotics X-Challenge - 1st place, national winner, Arab Championship qualifier | 2017 - 2020
- The Beiruter x 42 Beirut Technical Writing Competition - 3rd place, “The Button You Never Read” | Oct 2026
- Odoo Developer Technical Training - 42 Beirut x Odoo | July 2026
- 42 Beirut Cybersecurity Piscines - Linux, Networking, Security | Dec 2025
- 42 Beirut x Teknologiia Hackathon - APIs, Automation, n8n | Dec 2025
- HU Techcamp - Haigazian University | Aug 2025

LANGUAGES

Arabic: Native | **English:** Fluent