

Oussama Chemsî

Full Stack Developer

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PROFESSIONAL PROFILE

Full Stack Developer and Software Engineering student at 1337 (42 Network) with a rigorous foundation in low-level systems programming, secure infrastructure, and modern web interfaces. Highly proficient in C and C++, with a strong focus on building resilient, containerized architectures from the ground up. Experienced in designing secure deployment pipelines, hardening applications with Web Application Firewalls (ModSecurity), and managing zero-trust environments (HashiCorp Vault). Passionate about tackling complex algorithmic challenges, optimizing system performance, and delivering scalable software solutions.

TECHNICAL SKILLS

Languages & Frameworks: C, C++, Python, Shell, TypeScript, JavaScript, SQL, React, HTML5, CSS3, Tailwind CSS
System & Security: ModSecurity (WAF), HashiCorp Vault, Unix Signals, TCP/IP, Socket Programming, Graphics, Algorithms

DevOps & Tools: Git, Docker, Vim, Linux, Docker Compose, Bash Scripting, NGINX

1337 ENGINEERING PROJECTS

ft_transcendence

Security & Infrastructure Engineer

- Engineered a robust, fully containerized deployment pipeline for a full-stack web application using Docker and Docker Compose.
- Architected the core security infrastructure, integrating HashiCorp Vault for strict, zero-trust encrypted secret management.
- Hardened the application environment by configuring and deploying ModSecurity (WAF) rules to monitor traffic and protect against web vulnerabilities.

Systems Architecture (Inception)

Systems Engineer

- Designed and deployed a Docker-based infrastructure incorporating NGINX, WordPress, and MariaDB.
- Implemented strict volume management for persistent data storage and established secure, custom bridge networks for isolated inter-container communication.

cub3d

C Developer

- Implemented a 3D game engine using raycasting in the style of Wolfenstein 3D and MiniLibX.

Core Unix Systems (minishell & ft_irc)

C/C++ Developer

- **minishell:** Recreated a fully functional Unix shell in C, engineering a lexical parser and handling execution, pipes, and signals.
- **ft_irc:** Built a compliant Internet Relay Chat server in C++98 using non-blocking I/O (poll).

Algorithmic & System Utilities

- **push_swap, Libft & get_next_line:** Developed advanced sorting algorithms and standard C library replicas.
- **Object-Oriented Programming:** Mastered advanced C++ concepts by completing CPP Modules 00 through 09.
- **Concurrency & Inter-Process Communication:** Solved synchronization problems in Philosophers and engineered client-server data transfer using UNIX signals in minitalk.
- **Network & Administration:** Configured network subnets in NetPractice and established secure virtual machine environments in Born2beroot.

ADDITIONAL FULL STACK PROJECTS

FirstLink Cars

Full Stack Developer

- Architected and deployed a complete car rental web platform tailored for automotive fleet management and client interfacing.
- Engineered robust backend REST APIs and business logic using Node.js and Express.
- Built dynamic, responsive user interfaces and client-facing components using TypeScript and React.
- Successfully integrated automated booking notifications using third-party messaging APIs (GREEN-API).

EDUCATION & INDUSTRY ENGAGEMENT

Software Engineering | 1337 School (42 Network)

2023–Present

- Intensive peer-to-peer Computer Science curriculum focusing on C, C++, Algorithms, and Unix Architecture.
- Current Milestone: Level 11.29 (Benguerir Campus).

Baccalaureate in Physical Sciences

2021

- Major: Physical Sciences.

LANGUAGES

Arabic: Native

English: Advanced