Ayoub Hamou

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Education

Polydisciplinary Faculty of Ouarzazate Sept 2018 – June 2021
License degree in Physics and Chemistry

1337 Oct 2022 – Present
IT training

Coursework

Courses: Object-Oriented Programming, Data Structures & Algorithms, Discrete Math, Linear Algebra, Calculus, Physics, Chemistry...

Skills

Languages: C/C++, Java, Python, JavaScript/TypeScript, HTML/CSS
Frameworks: Django, Spring Boot
Tools: Git/GitHub, Unix Shell, Docker, Neovim, VS Code, IntelliJ CLion/IDEA

Projects

Minishell | *C, Git, Makefile, Valgrind, GDB, Unix Shell*

- Built a POSIX-compliant Unix shell in C with core features like command execution, piping, and redirection
- Implemented built-in commands (‘cd‘, ‘echo‘, ‘pwd‘, etc.) and managed process control with system calls
- Handled signals (‘CTRL+C‘, ‘CTRL+D‘) to ensure robust shell behavior and user responsiveness
- Used Valgrind and GDB for debugging, and automated builds with Makefile

Inception | *Docker, Docker-Compose, Nginx, WordPress, MariaDB, Linux*

- Set up a multi-container application using Docker and Docker-Compose to host WordPress with a MariaDB backend
- Configured Nginx as a reverse proxy to manage HTTP traffic and ensure secure access via SSL
- Built and deployed custom Docker images, isolating services for better scalability and maintainability
- Developed scripts to automate container orchestration and ensure smooth deployment
- Strengthened understanding of containerization, networking, and Linux systems administration

IRC Server | *C++, Sockets, Multi-threading, Networking, RFC 1459, Git*

- Collaboratively built an IRC (Internet Relay Chat) server in C++ following the RFC 1459 standard
- Implemented client-server communication using socket programming and managed multiple connections via multi-threading
- Developed key features like user authentication, channel management, and message broadcasting
- Tested the server for reliability, scalability, and compliance with the IRC protocol
- Used Git for version control and coordinated tasks effectively within a team setting

TRANSCENDENCE | *Three.js, Django Channels, WebSockets, Python, JavaScript, Git*

- Developed an interactive multiplayer game using Three.js for the frontend and Django Channels for real-time backend communication.
- Implemented WebSockets for low-latency interactions, enabling seamless gameplay experiences.
- Designed and managed backend logic to handle game states, player synchronization, and event broadcasting.
- Collaborated with teammates to integrate the game into a full-stack web application with authentication and user management.
- Enhanced skills in real-time systems, 3D graphics, and teamwork across a distributed architecture.