

Experience

FREELANCE

Casablanca, MA

full stack developer

Sep 2024 – Feb 2025

- Developed a platform enabling creators to register accounts, invite followers, sell products, and receive donations.
- Built with React, Next.js and Express.js containerized with Docker.
- Implemented CI/CD pipelines for automated testing and deployment.
- Deployed on Google Cloud Platform (GCP), with auto-scaling instances to handle variable traffic and load balancing distribute requests across multiple instances.
- Configured infrastructure to automatically destroy idle instances after traffic decreases, optimizing cost efficiency.

Projects

MINISHELL | bash implementation

systems Programmer (C, Unix, Shell, Git)

Jan 2024 - Jun 2024

- Built a custom Unix shell in C, replicating core Bash functionalities including command execution, pipes, and redirections.
- Developed a robust **parser** to handle input parsing with support for quotes, environment variables, and expansions.
- Implemented **process management** using `fork`, `execve`, and `wait` to handle foreground and background processes.
- Added **signal handling** (`Ctrl+C`, `Ctrl+\`, `Ctrl+D`) to mimic real shell behavior and improve user experience.

PongGame | Full Stack Web Application

Full Stack Developer (Next.js, SQLite, Fastify.js, Typescript)

Jan 2025 - Sep 2025

- Real-Time Interaction:** Developed a real-time multiplayer game using Websockets technology for seamless interactive gameplay, chat, and instant updates.
- Third-party authentication:** Integrated third-party authentication services; Intra42 and Google Authenticator 2FA.
- Database Design & Scalability:** Designed the database schema using SQLITE for structured data storage and retrieval, engineered backend architecture for scalability, ensuring low-latency during peak traffic.
- Security & Authentication:** Implemented secure user authentication and authorization mechanisms using JWT and route/websockets guards, two-factor authentication (2FA), safeguarding against any security threats.

Education

1337 – 42 Network

Computer Software Engineering; Level: 10.00

Khouribga, MA

Oct 2022 – Oct 2025

Programming Skills

- Languages:** TypeScript, C/C++, JavaScript, SQL, Shell
- Technologies:** React, Next.js, Tailwind CSS, Zustand, Redis, Node.js, Fastify.js, Nest.js, Prisma, Socket.IO, Docker, docker-compose, GitLab, GitHub, Git, Express.js, Framer Motion, Vite
- Databases:** PostgreSQL, MongoDB, MySQL, MariaDB, SQLite, Firebase
- Spoken Languages:** English and Arabic