Hamza Jamil Saied

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Portfolio • GitHub • LinkedIn

Summary

Backend engineer with expertise in systems programming, algorithmic optimization, and concurrent systems. Built production-ready solutions for NP-hard optimization problems, authored lock-free concurrent data structures in C++20, and delivered cost-reducing microservices architecture. Strong foundation in low-level programming (C/C++) with proven ability to deliver high-performance solutions in Go, JavaScript, and C#.

Technical Skills

Languages: C++ (primary), C, Go, JavaScript/Node.js, C#, Java, Python, SQL

Systems & Tools: Linux/Unix, Git, CMake, Vulkan, OpenGL, .NET/Mono, gRPC, Docker

Backend Technologies: Node.js, Express, MongoDB, MySQL, Redis, REST APIs, Microservices

Specializations: Concurrent programming, algorithmic optimization, performance tuning, systems architecture

Professional Experience

Backend Developer — Booster BC
Hamammet, TunisiaJune – August 2025

- Integrated new hotel supplier and service into production microservices in one week, demonstrating deep understanding of existing Go/gRPC architecture
- Contributed to ongoing microservices development with focus on reliability and maintainability

Technologies: Go, gRPC, microservices architecture

Backend Developer — Booster BC
Hamammet, TunisiaJune – August 2024

- **Solved NP-hard hotel room allocation optimization problem** combining inventory from multiple suppliers with varying constraints (availability, pricing, room types). Implemented heuristic-based algorithm that became the only production-ready solution, directly enabling core business functionality
- Rewrote critical microservice in 2–3 weeks using defensive JavaScript patterns, eliminating implicit type coercion, arbitrary assignments, and silent runtime failures
- Fixed production-critical API integration bug in Vervotech service that caused system crashes when enabled
- Engineered rule-based local alternative to Vervotech API with i18n support, eliminating external dependencies for smaller hotels
- Led architectural design for Node.js → Go migration and REST → gRPC transition; developed shared microservices foundation that reduced server costs by >50%

Technologies: Node.js, MongoDB, Express, Go, gRPC, SQL, Redis

Education

Engineering Degree in Computer Science (Master's equivalent)
ESPRIT — Private Higher School of Engineering and Technology *Expected May 2027*

Specialization in software engineering with emphasis on systems programming, algorithms, and computer architecture

Preparatory Classes for Engineering (Math-Physics)
Faculty of Science of Tunis *2022 – 2024*

Rigorous two-year program modeled on France's classes préparatoires, focused on advanced mathematics and physics

Technical Projects

Hubris Game Engine (C++20, ongoing)
github.com/TheSphynxoid/Hubris-Engine

- Complete rewrite from ground up (previously 'Sphynx Engine') after learning Vulkan revealed architectural limitations
- **Implemented custom smart pointer library** with co-allocated control blocks for cache locality, CAS-based lock-free weak-to-strong promotion, and concept-constrained polymorphic conversions
- Focuses on Vulkan integration, low-level systems programming, and modern C++ best practices

Technologies: C++20, Vulkan, OpenGL, CMake, Mono (C# scripting)

StreamLine Threading Library (C++20, ongoing)
github.com/TheSphynxoid/StreamLine

- **Dependency-free C++ concurrency library** featuring WaitGroup (Go-inspired), SignalPrimitive (unified barrier/latch), and pluggable wait strategies
- Implements owner-thread enforcement, generation-based synchronization (race-free Reset), and hybrid spin/CV waiting
- Demonstrates advanced understanding of memory ordering, atomics, and lock-free algorithms

Technologies: C++20, atomics, memory ordering, condition variables

Academic Projects

- **Eventra:** JavaFX event management system with role-based access control and full CRUD operations
- **Parking Manager:** GTK-based C application with file persistence — github.com/TheSphynxoid/parking
- **Smart Aquarium:** PIC microcontroller-based system with sensor monitoring, LCD display, alert system, and EEPROM data logging