Ghali El Ouarzazi

Senior Software Engineer | Rust, TypeScript & Distributed Systems
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Senior Rust and TypeScript engineer. I build distributed systems, full-stack applications and generative AI products, from architecture through production operations and maintenance.

PROFESSIONAL EXPERIENCE

AVAIL | Senior Blockchain Engineer | Freelance (Remote) — May 2023 - Present

Avail Data Availability: implemented the initial blockchain in Rust/Substrate (Tokio, libp2p). Designed and built **Infinity DA**, a sharded architecture with redesigned validation and P2P: **2 GB per block every 6 seconds**, up from **4 MB every 20 seconds**.

Nexus: TypeScript middleware and intents API, used in production by **FastBridge**, the **Nexus SDK** and **Avail widgets**. Cross-chain fund aggregation **in one operation with one signature**. Mayan/Relay integrations.

Initial distribution: led and executed for **250,000+ addresses**, representing **$100M+ at launch prices**.

Integrations with Starknet, Fuel Network, Binance Wallet, Nova Wallet, SubWallet and Ledger. Designed and built **Fusion**, a multi-asset staking protocol, and contributed to network economics.

Direct collaboration with the founders, technical leadership, specifications, development and incident resolution.

TERNOA | Full-Stack Developer, then Blockchain Lead | Freelance (Remote) — Jun 2021 - May 2023

Rust/Substrate: NFT, marketplace, auction and rental modules, runtime migrations. TypeScript SDK, indexer, API, bridges and launchpad. Technical team coordination.

Built and operated the **Ternoa NFT marketplace** end to end, covering frontend, backend and production operations.

DÉSIRADE | Application & Web Developer / Project Manager | Apprenticeship (Toulouse) — Sep 2016 - Oct 2019

Business applications for **Airbus, Syngenta, Thales Alenia Space and Pichet**: logistics, resources and agricultural tools. C#, .NET, VB.NET, WPF, JavaScript.

TECHNICAL SKILLS

Development: Rust (Tokio, libp2p), TypeScript, JavaScript, Go, Node.js, Express, React, Next.js, Tailwind CSS, shadcn/ui.
Data & APIs: PostgreSQL, SQL, MongoDB, Drizzle, REST, GraphQL, Socket.IO.
Systems & blockchain: distributed systems, P2P, Substrate, Solidity, EVM, ethers.js, Web3.js, Wagmi.
Multimodal AI: LLM, OpenRouter, image generation, TTS, streaming, real-time voice, camera-based visual analysis.
Tools, testing & observability: Git, Docker, Jest, Mocha, Chai, Truffle, SigNoz, Datadog.

PERSONAL PROJECTS

Passion projects built solo, **200+ users combined**, **Stripe** payments.

Decision Craft: multiplayer role-playing game, generative storytelling, contextual prompts, image metaprompting and parallel real-time generation.

Stranger AI: conversational characters with memory, dynamic context, text/image consistency, multimodal orchestration and automated evaluations.

EDUCATION

2019 | Engineering Degree in Computer Science, 3iL Ingénieurs, Rodez, apprenticeship, CTI-accredited.
2018 | DESS (Graduate Diploma), Big Data concentration, Université du Québec en Outaouais, Canada, dual degree with 3iL.
2016 | DUT (University Diploma of Technology) in Computer Science, Université Paul Sabatier, Toulouse.

ADDITIONAL INFORMATION

Languages: French native, English fluent (daily working language), Spanish and Arabic (limited working proficiency).
Strengths: autonomy, learning, teamwork, adaptability, technical leadership.
Certifications: Docker, React, Node.js, blockchain (OpenClassrooms, IBM, Consensys, full list on LinkedIn).
Interests: piano, multiple national and international first prizes, best Chopin interpretation award and two awards for most promising young Moroccan musician. Tennis.