NASSIM EL KARATI

SOFTWARE ENGINEER

CONTACT

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EDUCATION

2023 - 2026
UNIVERSITY OF LIMOGES
- Bachelor's degree in Mathematics and Computer Sciences

SKILLS

- **Programming languages:** C++, TypeScript, Rust, Java, Python, C#
- **Systems:** Real-Time & Parallel Computing (CPU/GPU), Debugging and Profiling
- **Rendering:** OpenGL, WebGL, WebGPU, DirectX
- **Networking:** Sockets, TCP/UDP, Peer-to-Peer
- **Web:** React, Svelte, Vue
- **Databases:** MySQL, PostgreSQL
- **Tools:** Git, Linux, Docker, Unity
- **Soft skills:** Project Management, Teamwork, Critical Thinking

LANGUAGES

- English (Fluent)
- French (Native)
- Arabic (Darija)

PROFILE

Full-stack software engineer currently studying at the University of Limoges. Passionate about software development, real-time systems, graphic rendering, and game engine design. Experienced in contributing to well-known online games (10M+ downloads), demonstrating strong practical skills and a drive for building efficient, scalable software — check out my portfolio at **www.elkarati.dev**

WORK EXPERIENCE

Vexxus Arts   2025 - PRESENT
Lead Game Developer

- Rewrote the popular game *Mope.io* from scratch using my own engine, *Phoenix.Engine*, designed for high player counts, modular code, and long-term maintainability. Improved server capabilities by 500% and client-side rendering performance by a minimum of 200%.
- Maintenance and bug fixes tasks for the online game *Diep.io* Developed an online 2D peer-to-peer football game from the ground up, featuring real-time multiplayer mechanics (pending release).

3AM Experiences LLC   2024 - 2025
Full-Stack Web Developer

- Collaborated with a team to develop a platform connecting content creators and companies for advertising, including managing huge datasets, tracking metrics, and streamlining partnerships.
- Refined the interface and optimized system performance for a game distribution platform, creating a faster, more intuitive experience and reducing load times by 75%.

LATEST PROJECTS

Phoenix.Engine 3D   2025

- A C++ port of the original TypeScript engine, evolved into a high-performance 3D voxel engine capable of rendering millions of voxels

Evolution.io   2025

- An AI-driven ecosystem simulation built on top of *Phoenix.Engine*, modeling carnivores, herbivores, and plants to study emergent behaviors at scale. Handles up to 60,000 entities while maintaining real-time performance.

Phoenix.Engine   2025

- A modular, high-performance 2D multiplayer game engine written in TypeScript, designed for massive player counts and fast rendering. Supports over 5,000 concurrent players per server and up to 50,000 total entities with less than 20ms per tick, ensuring low latency, scalability, ease of use, and real-time efficiency.