

Karo Roghzai

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EDUCATION

Kalar International Educational Complex

Expected Graduation: June 2026

Kalar, Iraq

Aug. 2025 – Present

EXPERIENCE

Co-founder & Lead Developer

Jan. 2025 – Present

Avante Pathways (Remote)

- Built AI career quiz platform generating 200+ personalized recommendations for high school/college students using Nuxt/PostgreSQL/Redis
- Developing teen social network using Nuxt/Vercel/MongoDB to replace corporate LinkedIn feel
- Earned SWPS 'Young Rising Company' award and Eureka'25 finalist as co-founder for AI education platform innovation

PROJECTS

Libre Assistant | *Nuxt, Vue, JavaScript, Vercel*

Feb. 2025 – Present

- Built AI chat interface with cross-chat memory, personalization, incognito mode, model selector, multimodality, web search, and interleaved thinking using Nuxt/Vercel
- Enhanced user choice by integrating 13 AI models from 6 AI labs via Hack Club's AI proxy
- Improved text rendering performance by 18.8x by reworking the text streaming architecture to get it from $O(n^2)$ to $O(n)$ complexity
- Created unparalleled chat UX by having a clean and responsive UI, keybinds, and extensive customization on both mobile and desktop

HackSearch | *Python, Node.js, TypeScript, PostgreSQL*

(IN DEVELOPMENT) Oct. 2025 – Present

- Creating semantic search engine that indexes 10M pages in just 12GB storage by filtering Common Crawl WAT segments for top-ranked English hosts
- Optimizing space by compressing page data to 1.25kb/page—just 3.7% the average—via binary-quantized 768-dim vectors and metadata-only storage
- Indexing 14,000 pages/day on single Finland VM (0.5 CPU thread, 2GB RAM) via autonomous download-and-scan pipeline
- Designed efficient ranking algorithm that ranks in around 0.3s that combines Hamming distance vector search with log-boosted harmonic centrality on low-performance hardware

WebOsu 2 | *JavaScript, PixiJS, Git*

Apr. 2024 – Present

- Improved website performance after removing unused styles, refactoring to PixiJS v7, and minifying the codebase for production
- Increased user base by 16% after improving accessibility on mobile/Mac platforms
- Modernized codebase for better browser compatibility by updating XHR requests to fetch API, upgrading from PixiJS v5 to v7, and implementing modern ES6 standards

TECHNICAL SKILLS

Languages: JavaScript/TypeScript, Python, C, C++, HTML/CSS, Lua

Frameworks: Vue, Nuxt, Node.js, PixiJS

Databases: MongoDB, PostgreSQL, Redis, Qdrant

Developer Tools: Git, VS Code, Vercel, Sanity.io