

Mohammad Khalid

Software Engineer (Full-Stack) | TypeScript, React, Next.js, Node.js, Python, LLM APIs

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Right to work in the UK until 30 June 2028

Summary

Full-stack software engineer (BSc Information Technology, 2024) who builds and ships React/Next.js, Node.js and Python projects end to end. Built and deployed the Bustan Bakers website with CI-enforced performance budgets and automated SEO tests, built a git-backed CMS and WebGL portfolio, and published an interactive browser-based course that teaches how to build a GPT from scratch. Uses AI coding agents such as Claude Code daily, with strict TypeScript, CI and automated tests as the safety net. Currently IT Support Specialist at S&P Global, London.

Technical Skills

- **Languages:** TypeScript, JavaScript (ES6+), Python, C (C99), Dart, GLSL, HTML5, CSS3, Bash
- **Frontend:** React 19, Next.js (App Router), Svelte 5, Tailwind CSS, three.js (WebGL), Framer Motion, responsive design, SEO and structured data (JSON-LD)
- **Backend and data:** Node.js, REST API routes, OAuth (GitHub), API integration (REST, WebSockets), Firebase (Authentication, Firestore, Storage)
- **AI and LLM:** OpenAI API, Google Gemini API, multi-agent systems, structured LLM outputs (Pydantic), AI-assisted development (Claude Code)
- **Mobile:** Flutter, Dart
- **Testing and delivery:** GitHub Actions CI/CD, Node.js test runner, ESLint, performance budgets, Vercel, GitHub Pages, Git, Linux

Projects

Portfolio and git-backed CMS (iamkhalid.xyz) | Next.js 16, React 19, TypeScript, three.js, Tailwind CSS | 2024 - Present

- Built a git-backed CMS with GitHub OAuth, signed HttpOnly session cookies and an allow-list; schema-driven admin forms commit content atomically through the GitHub git data API, with conflict detection and retries.
- Built the site on the Next.js App Router with markdown, YAML and JSON content, RSS, a sitemap, dynamic Open Graph images, Spotify and GitHub integrations, and CI (typecheck, lint, build) deploying to Vercel.
- Rendered the homepage as a scroll-driven black-hole simulation in three.js with raw GLSL shaders (Schwarzschild geodesics, Doppler and gravitational colour shifts, HDR bloom).

Bustan Bakers website (bustanbakers.com) | Next.js, React, TypeScript, Tailwind CSS, WebGL | 2025 - Present

- Built and deployed a statically generated multi-page site (menu, products, locations, product enquiry flow) on Vercel, with scroll-driven CSS animation, a handwritten-wordmark splash and a lazy-loaded WebGL hover shader.
- Set up a GitHub Actions pipeline (lint, typecheck, build, tests) that fails the build if any route exceeds 178 KB gzipped JavaScript or 900 KB transfer.
- Added automated per-route SEO checks (single canonical URL, parseable JSON-LD, prerendered Open Graph images, sitemap match) and an AVIF image pipeline with five responsive widths.

Invent a GPT course (iamkhalid2.github.io/microgpt-course) | Svelte 5, Vite, Python, Pyodide | 2026 - Present

- Created a 19-chapter course that rebuilds Andrej Karpathy's 200-line pure-Python GPT from scratch for beginners, deployed to GitHub Pages with GitHub Actions (12 GitHub stars).
- Learners write and run real Python in the browser through Pyodide, with no server or uploads; the in-browser model is tested against Python reference outputs.

Kiraya, property management app (personal project, not published) | Flutter, Dart, Firebase | 2025

- Built a cross-platform Flutter app for landlords covering rooms, tenant profiles with document storage, rent payments and income charts, on Firebase Authentication (email and Google sign-in), Cloud Firestore and Storage.

Also: WhatsAppGPT (Node.js, whatsapp-web.js, OpenAI and Gemini APIs, 2023), a WhatsApp chatbot with conversation memory (17 GitHub stars, 15 forks). Computer-Use (Python, Gemini Live API, Tesseract OCR, 2025), a voice-controlled desktop agent (11 stars). KWealth (Python, Gemini API, Pydantic, Streamlit, 2026), a four-agent stock analysis system. Black Hole Simulation (C99, OpenMP, 2026), a dependency-free general-relativity ray tracer.

Experience

IT Support Specialist | S&P Global, London, UK | 2026 - Present

- Provide technical support to employees at a global financial intelligence and data company, handling incidents and service requests in ServiceNow.
- Support and troubleshoot employee devices with Microsoft Intune.
- Support user accounts and access in Active Directory.

Education

BSc Information Technology | Graphic Era University, Dehradun, India | 2021 - 2024