ALAA RAJAB | Software Engineer, AI Applications

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PROFESSIONAL SUMMARY

Software Engineer with 3+ years of experience building secure REST APIs and full-stack web applications with React, Next.js, TypeScript, Node.js, PostgreSQL, MongoDB, and Supabase, now focused on AI applications. Built and deployed a production RAG assistant (Cloudflare Workers AI, vector search, Llama 3.1) on a dental clinic's live website, measured with a Python evaluation suite at 97% answer accuracy and 100% correct refusal of out-of-scope questions. Built a tool-calling AI assistant (OpenAI, Vercel AI SDK) secured by PostgreSQL row-level security. Experienced with streaming, structured outputs, prompt engineering, cloud deployment, CI/CD, and accessible design, backed by 5+ years in website management and technical systems.

TECHNICAL SKILLS

- **AI & GenAI:** RAG pipelines (production), embeddings & vector search (Cloudflare Vectorize, bge-m3), Cloudflare Workers AI (Llama 3.1), OpenAI API (GPT-4o mini), Vercel AI SDK, function/tool calling, LLM evaluation (test sets, hit@k, MRR), prompt engineering & guardrails, streaming AI interfaces, structured outputs
- **Languages:** JavaScript (ES6+), TypeScript, Python (pandas, matplotlib, Jupyter), HTML5, CSS3, SQL, working knowledge of Java
- **Frontend:** React, Next.js, Tailwind CSS, React Router 7 (Remix), React Query, React Hook Form, Recharts, Polaris, Responsive Web Design, UI/UX, Web Accessibility (a11y/WCAG)
- **Backend & Databases:** Node.js, Express.js, RESTful APIs, GraphQL APIs, JWT Authentication, Supabase (Auth, Row Level Security, pg_cron), Zod, PostgreSQL, MongoDB, MySQL, Cloudflare D1, schema design & indexing
- **Cloud & Deployment:** Cloudflare Workers, Vercel, AWS (EC2), Google Cloud, Render, Nginx, Docker, PM2, CI/CD, GitHub Actions, HTTPS/SSL
- **Testing & Practices:** Jest, Vitest, React Testing Library, Cypress, Playwright, Git, GitHub, Jira, Postman, Figma, Agile/Scrum, OOP, SOLID, Modular Architecture, RBAC, rate limiting

RELEVANT EXPERIENCE

Technical Administrative Assistant | BAMEZ Private Dental Practice | Hybrid *Jan 2025 – Present*

- Designed, built, and shipped Cosmo Dental Clinic's bilingual, WCAG 2.2 AA accessible, SEO & GEO-optimized website with React + Vite on Cloudflare; praised by the client.
- Deployed an AI assistant on the site that answers patient questions from clinic documents at 97% accuracy (see Projects).
- Added a contact form projected to cut phone inquiries by roughly 50%.
- Manage administrative tasks, including accurate data entry, Excel spreadsheets, and digital records, to support practice operations.

Software Engineer (Hackathon via TripleTen) | Oro | Remote *Jul 2026 – Aug 2026*

- Selected for a competitive TripleTen hackathon; led the migration of Oro's financial-products dashboard from vanilla JavaScript to React + Vite.
- Partnered with engineering, QA, and UX to validate and deliver a modernized dashboard within the sprint.

Software Engineering Extern | Hybrid Hiring Solutions | Remote *Jan 2026 – May 2026*

- Developed features for a production hiring platform with React 18, TypeScript, Meteor 3.4 (Node.js), and MongoDB.
- Built reusable React/TypeScript UI components, converting Figma wireframes into responsive, accessible interfaces.
- Implemented real-time data sync with Meteor DDP/WebSocket and server-side APIs with secure validation (Meteor Methods).

WordPress Developer Volunteer | Rebecca Everlene Trust Company | Remote *Mar 2024 – Dec 2024*

- Developed and maintained WordPress sites with custom HTML, CSS, and JavaScript; optimized responsiveness via media queries and progressive enhancement, increasing mobile engagement.

Systems Developer | Zimmo Trading Co. | Remote *Jun 2020 – May 2022*

- Contributed to an automated cold-chain monitoring system across 50+ temperature loggers, saving 10+ staff hours per week and cutting excursion detection from a day to under 30 minutes.
- Developed React, Node/Express, and PostgreSQL features for inventory (1,200+ SKUs), expiry alerts, and fleet/delivery tracking.

- Built alerts and compliance reports that reduced inspection prep from days to under an hour.

PROJECTS

Cosmo Dental AI Assistant (RAG Chatbot) | TypeScript, Cloudflare, Python | Live Site | GitHub *Oct 2026*

- Built and deployed a bilingual (English/Spanish) RAG chatbot, live on the clinic's website, in TypeScript on Cloudflare Workers AI, Vectorize, and D1: in-browser PDF ingestion, chunking, embeddings, vector search, and cited Llama 3.1 answers.
- Created a Python evaluation framework (pandas, Jupyter) with a 38-question test set; prompt iteration raised accuracy from 89% to 97%, and chunk-size experiments set production defaults.
- Added guardrails (grounded answers, no medical advice, PII redaction, rate limiting) and 18 Vitest tests; ~0.6 s responses at $0/month hosting.

Commission Tracker with AI Assistant | Next.js, Supabase, OpenAI | Live Demo | GitHub *May 2026 – Oct 2026*

- Built a full-stack sales and commission dashboard with admin approval and payout workflows, validated forms (React Hook Form, Zod), Recharts charts, and React Query caching.
- Added a streaming AI assistant (GPT-4o mini, Vercel AI SDK) that answers natural-language questions about sales and commissions through typed tool calls, so every figure comes from a real database query.
- Secured it with invite-only Supabase Auth and PostgreSQL row-level security that the AI assistant inherits, and capped AI costs with a fail-closed rate limiter and nightly pg_cron demo resets.

ADDITIONAL PROFESSIONAL EXPERIENCE

Robotics Instructor | Burhan Academy Summer Camp | Elgin, IL *Jun 2025 – Jul 2026*

Maintained lab technology and taught robotics programming (LEGO Mindstorms EV3) from problem to prototype.

Coding & Robotics Instructor | Dar Al-Fikr Schools | Jeddah, KSA *Aug 2012 – May 2020*

Taught programming and web development (grades 4–12); coached teams to international wins; Best Coach Award.

Web Content Manager | Robotics Coach | Al-Bayan Model School | Jeddah, KSA *Aug 2010 – Jun 2012*

Managed the school website (publishing, navigation, accessibility); coached FIRST LEGO League teams internationally.

EDUCATION & CERTIFICATION

Master of Information Systems | Cleveland State University | GPA: 4.00 *Aug 2023*

Bachelor of Science in Information Technology and Computing | Arab Open University | GPA: 3.96 *Jun 2010*

Certificate in Software Engineering | TripleTen Bootcamp *Jan 2026*