

Nader Khalil

Full-Stack Software Engineer

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Professional Summary

Full-stack software engineer who builds web applications and AI assistants that hold up in real use: easy to use, hard to break, and backed by automated tests. Holds a B.Sc. in Software Engineering and works end to end across the stack. Quick to pick up new tools and effective both independently and in a team.

Technical Skills

Frontend: React, Next.js, TypeScript, Vite, TanStack Query, Tailwind CSS, accessible UI (axe)

Data & Security: PostgreSQL + pgvector, MariaDB, Prisma, row locks, CSP, CSRF, rate limiting

Testing & CI: Vitest, Playwright, PHPUnit, race tests, GitHub Actions, dependency audits, Docker

Backend: REST APIs, layered architecture, Zod, Auth.js, PHP, C# MinimalAPI

AI: LLM integration, tool calling with human review, RAG, embeddings, LLM evals, prompt caching, Vercel AI SDK

Languages: TypeScript, JavaScript, Python, C, C++, C#, Linux

Technical Projects

AI Booking Platform

Live demo: booking.naderkhalil.dev · Case study: naderkhalil.dev/case-study.html

- One booking engine for any appointment business: clients book from a live calendar, advisors publish availability, and admins manage users, booking rules, and the knowledge base without a deploy. Next.js 16, TypeScript, PostgreSQL + pgvector, Prisma, Auth.js.
- AI assistant answers from the admin-managed knowledge base with citations, filtered by role in SQL, and prepares bookings and changes as cards that run only after the user confirms; about 120 live checks (prompt injection, data leaks, scope, Arabic) gate prompt changes.
- A business is configuration, not code: two sample businesses run on the same codebase, and a test fails if a business's words leak into the code.
- Concurrency-safe bookings (conditional updates and row locks, race-tested against a real Postgres), nonce-based CSP, Zod validation, rate limits, and 340 unit, 302 integration, and 84 end-to-end tests in CI.

Student-Faculty Services v2, Al Ain University capstone rewrite

Live demo: student-faculty-services-v2.infinityfree.io

- Rebuilt my 2024 senior capstone as a React 19, TypeScript, and PHP 8.4 app on MariaDB with 46 REST endpoints and no framework, deployed by GitHub Actions only when every test passes. Includes reminders, ratings, a waitlist, and a 10-second undo for cancellations.
- Prevented double bookings with ordered database row locks, proven by a race test where 8 students book one slot over real HTTP; 500+ PHPUnit, Vitest, and Playwright tests with axe accessibility checks (WCAG 2.1 AA).

42 Intra Logtime Calculator, published Chrome extension

Chrome Web Store: chromewebstore.google.com

- A lightweight extension with 60+ users that adds live logtime totals to the 42 Intra interface; it runs entirely client-side, collects no data, and is 19 KB.

Minishell (Unix Shell Implementation), 42 Abu Dhabi

- Developed a functional command interpreter in C supporting pipelines, environment variable expansion, and stream redirection.
- Managed process lifecycles via `fork()`, `execve()`, and signal handling routines.
- Prevented memory leaks across dynamic allocations using strict Valgrind analysis.

Professional Experience

- AI Trainer & Mentor**, *Department of Education and Knowledge (ADEK)*07/2026 – 08/2026
- Delivered technical instruction on agentic workflows, prompt structuring, and autonomous tool calling for the accredited AgenticVerse program.
 - Mentored cohort teams building functional AI prototypes addressing real problem statements from ADNOC, FANR, and Khalifa Fund.
 - Provided technical troubleshooting and support for participants experiencing environment setup issues and configuration errors.
 - Guided students through code debugging, API schema validation, and structured output parsing, explaining technical concepts clearly so they could solve problems on their own.

- QA & Software Tester**, *42 Abu Dhabi*01/2026
- Conducted functional and UI testing on an internal student platform using black-box testing and use-case scenarios to identify bugs before release.
 - Tested features across browsers and screen sizes to catch responsive and layout issues before deployment.
 - Re-tested fixes and checked related flows to confirm bugs were resolved without regressions.
 - Wrote detailed bug reports with clear reproduction steps to help technical teams isolate and resolve issues quickly.

- IT Support & Technical Staff**, *Ticketmaster*12/2025
- Provisioned and deployed specialized entry ticketing systems and scanner hardware for a high-volume international event.
 - Served as the on-site technical point of contact, delivering rapid incident resolution under strict, time-sensitive conditions.
 - Performed system health checks and connectivity audits, maintaining 100% operational uptime for entry points throughout the event.

- Software Engineering Intern**, *Timex IT Consulting*01/2024 – 04/2024
- Built C# MinimalAPI endpoints supporting sorting, pagination, and file handling.
 - Implemented request validation and standardized HTTP response handling across CRUD services.
 - Supported software release rollouts by identifying and documenting functional bugs in proprietary accounting software.
 - Coordinated with developers to verify technical fixes based on defect reports before client deployment.

Education & Certifications

B.Sc. in Software Engineering, *Al Ain University*
Computer Science Diploma, *42 Abu Dhabi*
CyberQ CTF, Top 10 Finalist, *UAE Cybersecurity Council*
Hack The Box University CTF, *119th of 1,014 teams*
MOEI x 42 Abu Dhabi AgentEra AI Hackathon, *Certificate of Appreciation*
AI on Watch with Datamind, *RecognAlze Hackathon*

Languages

Arabic Native	English Professional Proficiency
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