

Zaid Hany

Full-Stack Developer | Next.js, React, TypeScript

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PROFILE

Full-stack developer specializing in Next.js, React, and TypeScript — from PostgreSQL/Prisma data layers to responsive, offline-first PWAs. Ships production applications end-to-end with automated testing (Vitest, React Testing Library) and Vercel deployment. Recent work includes AI chatbot integration (Google Gemini), local-first architecture (IndexedDB/Dexie), and enterprise simulation tooling for a Siemens-sponsored graduation project.

SKILLS

Languages: TypeScript, JavaScript, HTML, CSS, SQL, Python, C++, Java, C#

Frontend: React, Next.js (App Router, React Server Components), Tailwind CSS, Responsive Design, PWA

Backend & Data: Node.js, Express.js, Next.js Server Actions, REST APIs, Prisma ORM, PostgreSQL, Neon, Clerk (Auth), Resend (Email)

State & Local-First: Zustand, IndexedDB (Dexie.js), BlockNote (ProseMirror), React Flow, MiniSearch

Testing & Tools: Vitest, React Testing Library, Git, GitHub, Vercel, Jira, VS Code, Linux (CLI)

EXPERIENCE

Siemens Digital Industries Software | Graduation Project

Sep 2025 – Jul 2026

Integration of SILKIT Architecture into In-Vehicle Network for Enhanced Digital Twin Simulation

Cairo, Egypt (Remote)

- Sponsored by Siemens Digital Industries Software as part of a cross-university collaboration; delivered in a multi-team agile setup alongside backend and case-study teams.
- Developed an Eclipse-based plugin using EMF (Ecore) to model domain data and integrate with Capella MBSE metamodels for automotive digital twin simulation, utilizing MCP (Model Context Protocol) to enable contextual, AI-assisted data exchange across the simulation ecosystem.
- Implemented Sirius-based diagram editors and custom SWT forms to visualize and manipulate simulation parameters, enabling model-driven configuration.
- Designed UI components leveraging the EMF.Edit framework for efficient model editing, validation, and serialization.

Software Intern | ArabFintech

Aug 2025 – Sep 2025

Core Foundation of Fintech Program

Cairo, Egypt

- Completed the intensive Core Foundation of Fintech program with an A score, covering banking systems, non-banking financial institutions, and fintech product design.
- Designed and delivered a fintech business-case mini project — from market research to a working demo — applying program frameworks to a real-world scenario.

Competitive Programming Trainee | Coach Academy

Aug 2024 – Nov 2024

Advanced Algorithms & Data Structures Training (Level 3)

Cairo, Egypt

- Completed Level 3 of a structured competitive programming track, deepening proficiency in advanced data structures and algorithms.
- Built consistent problem-solving performance — able to solve 90%+ of common technical interview problems with efficiency and accuracy.

AI Intern | Information Technology Institute (ITI)

Jul 2024

AI & Machine Learning Summer Training

Cairo, Egypt

- Built and evaluated machine learning models in Python across 5+ supervised and unsupervised algorithms, applying theoretical knowledge to practical projects.
- Trained deep learning models with TensorFlow and Keras.

PROJECTS

Synapse — Offline-First Personal Knowledge Graph | *Next.js, React 19, TypeScript, Dexie.js* Aug 2026 – Sep 2026
(*IndexedDB*), *BlockNote*, *React Flow*, *MiniSearch*, *Zustand*, *PWA* | [Live Demo](#)

- Built a local-first knowledge management app (Notion/Obsidian-style) where the browser is the server — all data persisted in IndexedDB via Dexie with reactive `useLiveQuery` reads and Zustand stores, requiring no account or backend; installable as a PWA with full offline support.
- Delivered a BlockNote block editor with debounced autosave (800ms, flush-on-unmount), `[[wiki-links]]` with autocomplete and Obsidian-style auto-created notes, plus a live backlinks panel — all links derived from note text, eliminating any links table to keep in sync.
- Engineered a force-directed knowledge-graph canvas (`@xyflow/react`) with a deterministic two-zone layout (linked clusters vs. unlinked grid), node size by backlink count and color by tag; implemented client-side full-text search (*MiniSearch*) with fuzzy matching, tag filters and highlighting, and a `Cmd/Ctrl+K` command palette.
- Shipped per-note version history (30 snapshots, two-click restore), Markdown/JSON export with a defensive import parser, daily notes, templates, and hashed tag colors — backed by a 233-test suite (unit + integration on fake-indexeddb, Vitest + React Testing Library).

AutoVerse — Car Rental Platform with AI Chatbot | *Next.js 16, TypeScript, Prisma,* Jul 2026 – Aug 2026
PostgreSQL, Clerk, Resend, Google Gemini | [Live Demo](#)

- Architected a full-stack car rental platform on Next.js 16 App Router with React Server Components for server-side Prisma queries, a relational PostgreSQL (Neon) schema (Users, Cars, Orders, Reviews with cascading deletes and Decimal pricing), and a four-stage order lifecycle with automatic time-based progression.
- Integrated Clerk authentication with a custom Clerk-to-DB sync layer, role-based access control (USER/ADMIN), and an auth-guarded rental flow; built a full admin dashboard (car CRUD, order management, role promotion) with React's `useOptimistic` for instant UI feedback.
- Implemented a multi-parameter catalogue filter (full-text search, price range, sort) with URL query params as the single source of truth, a cookie-driven dark/light theme applied before first paint (no FOUC), and Resend transactional emails with lazy client initialization for safe Vercel builds.
- Integrated VERO, an AI chatbot powered by Google Gemini that reasons over live inventory via Prisma to deliver contextual car recommendations, with conversation persistence, an analytics dashboard, and a direct “Book →” handoff into the rental flow.

FOS — Educational Operating System | *C, Eclipse, xv6-style Kernel* Oct 2025 – Dec 2025

- Designed and implemented core OS functionality in C: user/kernel mode separation, system calls for privileged operations, and heap management with page and dynamic allocators.
- Implemented virtual memory with page-fault handling and an Nth Chance clock page-replacement strategy.
- Built a Round-Robin priority scheduler with semaphores for shared-resource management; validated robustness across multi-process scheduling scenarios.

EDUCATION

Ain Shams University, Faculty of Computer and Information Sciences Cairo, Egypt
Bachelor's Degree in Computer and Information Sciences, Minor in Computer Science Oct 2022 – Jul 2026
CGPA: 3.1/4.00

CERTIFICATIONS & AWARDS

Siemens Graduation Project Certificate	Jul 2026
ECPC Qualifications 2025	Aug 2025
5th Place — FCIS Computer Graphics Contest	May 2025