

MOHAMED SAMEH

FULL STACK ENGINEER

TypeScript · Node.js · NestJS · React · Next.js · PostgreSQL · Redis · Docker

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Summary

Full stack engineer with 3+ years of professional experience shipping production systems end to end in **TypeScript**. Backend depth in **Node.js**, **NestJS**, and **Fastify** with **object-oriented design** and **SOLID principles**, autonomous service-oriented **RESTful APIs**, and **event-driven data streams** (RabbitMQ, BullMQ); frontend delivery with **React**, **Next.js**, and **React Native**. Comfortable across **relational and non-relational databases** (PostgreSQL, MongoDB, Redis), Docker, and unit, integration, and API testing. Author of the open-source **fastify-messaging** NPM package running in production across multiple services. Self-taught engineer focused on application functionality, performance, and scalability.

Experience

Full Stack Engineer

Jul 2024 – Present

Inframodern

Cairo, Egypt

- Own end-to-end system build and functionality for autonomous **microservices** written in **TypeScript** with **NestJS**, **Fastify**, **Prisma**, and **PostgreSQL**, serving multi-tenant workloads across 3+ integrated applications.
- Designed and published **fastify-messaging**, an open-source NPM package providing a production-ready RabbitMQ abstraction: fanout exchanges, dynamic per-service queues, DLQ handling, retry logic, and full TypeScript type safety.
- Built the cross-service user-sync **data stream** over **RabbitMQ**, integrating every platform application and reducing cross-service data inconsistency incidents to zero after deployment.
- Implemented **subscription-gating middleware** to enforce plan-based feature access and device registration limits across services.
- Delivered clean, versioned **RESTful APIs** and shipped the **React** and **React Native** clients that consume them; maintained 100% backward compatibility across all endpoints.
- Led code reviews enforcing **object-oriented design**, clean architecture, consistent error handling, and strict service boundaries.

Full Stack Engineer (Part-time Contract)

Jan 2025 – Jul 2025

Playplex

Wyoming, United States (Remote)

- Built and performance-tuned backend services with **Node.js** and **PostgreSQL** for high-throughput data pipelines.
- Implemented **tRPC** for end-to-end type-safe API contracts between the **Astro/Svelte** frontend and the Node.js backend, working on both sides of the contract.
- Integrated **Redis with BullMQ** for reliable background job processing and asynchronous queue management at scale.
- Wrote **unit, integration, and end-to-end tests** with **Vitest** and **Playwright**, provisioning isolated Redis and PostgreSQL test environments with **Docker**.

Software Developer

Feb 2024 – May 2024

Anytime Software

Prague, Czech Republic (Remote)

- Developed server-rendered features with **Next.js** and **Express**, contributing to both the API layer and the React components that consumed it.
- Tuned frontend performance through code splitting, prefetching, and image optimization strategies.

Open Source & Projects

fastify-messaging | *TypeScript, Node.js, AMQP, RabbitMQ*

Feb 2025

- Published and actively maintained NPM package for event-driven service-to-service communication in Fastify **microservice** architectures.
- Features: automatic exchange naming, fanout model, dynamic per-microservice queues, DLQ handling, retry mechanisms, and a type-safe publish/consume API.
- Running in production at Inframodern across 3+ services. Available at github.com/noahwillson/fastify-messaging.

Stockaya (*MVP in progress*) | *NestJS, Prisma, PostgreSQL, React Native, WatermelonDB*

2025

- Building a multi-tenant SaaS inventory and point-of-sale platform with an offline-first mobile client, idempotent order sync, and subscription-gated device registration.
- Backend is a NestJS modular, object-oriented service layer with tenant scoping enforced at the Prisma query layer; mobile client uses WatermelonDB for local-first persistence.

Custom HTTP Server | *TypeScript, Bun, zlib*

May 2024

- Built a lightweight HTTP/1.1-compliant server from scratch supporting dynamic routing and zlib response compression.
- Focused on minimal-overhead request handling and correct management of headers, status codes, and content types.

Technical Skills

Backend: TypeScript, Node.js, NestJS, Fastify, Express.js, Bun, OOP, SOLID, clean architecture

Frontend: React.js, Next.js, React Native, Redux Toolkit, Tailwind CSS, Svelte, Astro, HTML/CSS

Databases (SQL & NoSQL): PostgreSQL, MongoDB, Redis, Prisma, Mongoose, relational and non-relational data modeling

Messaging & Queues: RabbitMQ (AMQP), BullMQ, event-driven architecture, data streams, DLQ patterns

Testing & DevOps: Docker, unit / integration / end-to-end testing, Vitest, Playwright, Git, GitHub, Linux (Ubuntu)

API & Architecture: RESTful API design, service-oriented microservices, tRPC, multi-tenant SaaS, offline sync with idempotency

Languages: TypeScript, JavaScript, SQL, C++

Education

Ain Shams University

Sep 2019 – Oct 2023

Bachelor of Law

Cairo, Egypt

Self-taught engineer with 3+ years of hands-on production experience supplementing formal education.