Simon Hirst

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Profile

Senior software engineer with 5+ years’ experience delivering dependable web platforms. I design clear APIs, build React/Next.js front ends, and ship .NET/Node back ends with robust validation, authentication, and observability. I keep systems steady under load with solid SQL, queues, CI/CD, and pragmatic SLOs.

Skills & Technical Stack

**Used commercially**

Languages: TypeScript, JavaScript, C#, SQL

Frontend: React, Next.js, Tailwind, Blazor, Playwright

Backend/APIs: ASP.NET Core, Node.js, Express, REST, GraphQL, WebSockets

Data: PostgreSQL, SQL Server, Redis, EF Core

Messaging/Async: RabbitMQ, Azure Queues

Payments: Stripe

Cloud/Infra: Docker, Docker Compose, Kubernetes, OpenShift, Helm, NGINX, GitHub Actions, Terraform, Azure, AWS

Observability: OpenTelemetry, Prometheus, Grafana, Tempo

Testing/Perf: xUnit, Jest, Playwright, k6

**Personal / prototypes**

Languages: Go, Python

Frontend: WebGL2, GLSL, Socket.IO (client)

Backend/APIs: Fastify, WebSocket servers

Data: SQLite, MongoDB, Prisma

Audio/Media: FFmpeg, yt-dlp, Web Audio API, Piper TTS, NAudio

Ops: PM2, static exports, small Helm charts

Experience

**Freelance Software Engineer — Remote | Aug 2024 – Present**

* Built a Shopify ↔ ERP stock synchroniser (Node 20, Express, PostgreSQL, Redis) with webhook idempotency keys, outbox pattern, and exponential backoff; k6 load tests and SBOM’d images through GitHub Actions.
* Led a bookings and payments revamp (Next.js, ASP.NET Core, EF Core, SQL Server): Stripe Checkout with signed webhooks; rate-limit and CSRF hardening; Playwright end-to-end tests; CI caching that cut build times significantly.
* Shipped a reporting API and GraphQL gateway: schema stitching across five REST services, Dataloader caching, persisted queries; OpenTelemetry traces to Tempo; Prometheus metrics; Grafana dashboards tied to SLOs and error budgets.
* Delivered a live WebGL visualiser: AudioWorklet analysis and a <4 ms frame budget via typed arrays and preallocated buffers; deployed behind NGINX with static caching.

**IBM — Software Engineer — Remote / Hursley | Jul 2021 – Jul 2024**

* Delivered containerised IBM MQ for Kubernetes/OpenShift: production-ready charts/manifests (StatefulSets, probes, resources), TLS and RBAC defaults, and predictable upgrade paths.
* Wrote Go tooling to standardise cluster installs and validate storage/network policy pre-flight; reduced time-to-first-message and cut first-run misconfigurations.
* Added real-world telemetry (queue depth, throughput, memory, I/O) to Prometheus with Grafana dashboards in Git; improved incident signal and reduced noisy alerts.
* Partnered with customers on HA, storage, network policy, and DR tests; turned field issues into hardened defaults, runbooks, and checks.

**Dootrix — Software Engineer — Remote / Wickham | Mar 2020 – Jul 2021**

* Shipped .NET 5 and React onboarding flows (email verification, password reset, MFA prompts) with clear validation and rate limits; reduced support noise.
* Built REST endpoints and client SDK pieces with request validation and helpful error responses; automated CRM sync via Azure Functions and queues.
* Pushed quality gates with xUnit, Jest, and Playwright in CI; added application logs and traces so PMs could see funnel drop-offs and act.

**Zupa — Software Engineer — Southampton | Sep 2019 – Mar 2020**

* Built high-traffic checkout in ASP.NET Core with idempotent Stripe payment flows and safe retries.
* Tuned SQL to remove the slow-query tail; added background jobs for reconciliation and notifications.
* Set up symptom-based alerts and readable dashboards to surface issues early.

Selected projects

**AI Radio Station v2.0 — 24/7 internet radio with AI DJs, single synced stream, hourly news/weather, chat, requests, and admin controls.**

Stack: TypeScript, Node 20, Express, Socket.IO, Next.js, SQLite, FFmpeg, yt-dlp, Piper TTS

Link: Repo (private while in active dev)

**Mesmerize (WebGL2 visualiser) — Shader scenes, audio-reactive transitions, overlay mode, plugin hooks.**

Stack: TypeScript, WebGL2, GLSL, AudioWorklet, Vite

Link: [GitHub: simon-hirst/Mesmerize](https://github.com/simon-hirst/Mesmerize)

**LemonStand (microservice sketch) — Product, orders, and catalogue services; API gateway; queue-backed jobs; docker-compose for local dev.**

Stack: Node, Express, MongoDB, Redis, RabbitMQ, Docker, K8s scaffold

Link: [GitHub: simon-hirst/lemonstand](https://github.com/simon-hirst/lemonstand)

Education

BSc Computer Science (2:1), University of Liverpool