Tor Loch

Senior Software Engineer · full stack · business applications and applied AI

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SUMMARY

Senior Software Engineer with 20+ years of web and software development, building the applications a business runs on: a service floor's operations platform, a 22-brand .NET platform, analytics and applied AI. C#/.NET, PHP, SQL and TypeScript, with Docker, Azure and AWS with Terraform.

I own the work from the user's problem through the data model, the front end, the deploy and the support. Most often I have been the one developer the operation depended on, frequently inside a marketing team. I direct AI coding agents with written specs, task plans, tests and a separate reviewer, and the design decisions and the release stay mine. I started programming with tools that cut call times in call centers, and I still take things apart to see how they work.

EXPERIENCE

Senior Software Engineer

Education company · 2026 – present

- Build and run an analytics platform in production, built to replace an estate of 822 legacy reports; the replacement is ongoing. Nightly data-refresh registry, metrics from web analytics and the email platform.
- Cut a measured production Email Performance request from 1.549 s to 0.064 s by replacing a repeated count over 5.26 million rows with a maintained summary; equal results on 220 of 220 date ranges in the September 29, 2026 release. Six more report pages went from 7–17 s to 0.4 s or less (0 differences in 461 checks); a customer profile's first load went from 97 s to 1.9 s.
- Browser recording studio that replaced a hosted service: live captions, approvals and time-zone bookings inside the company's platform. Release gate of 20 suites: 1,332 tests passed, 0 failed. In production: 46 tagged releases in its first 34 days, and a recovery drill that rebuilt it in 36 min 34 s against a 4-hour target.

Senior Web Developer

National home-services company · 2022 – 2026

- The developer the company's marketing websites depended on: 22 brands and 24+ sites, with delegated Azure access to run them independently.
- Led 20+ migrations from WordPress and Kentico to Umbraco, with URL mapping, redirects and checks for titles, canonical URLs and structured data; a migration engine with seven converters, a dry run and a snapshot before each write.
- One shared .NET template for the brands, first released to the marketing group in November 2025: 16 reusable sections, design tokens from Figma, 57 location-brand records, a go-live switch per brand. With it, a brand migration went from months to days.
- Umbraco 13 to 17 and .NET 10 upgrade; legacy sites moved off third-party hosts into Azure; from December 2025, deployment from one repository to two hosted CMS projects, later with per-project locks, replay with no-op detection, logging and warm-up.
- Planned my own hand-off before leaving in April 2026: recruited replacement developers, moved design work to the creative team and email to a dedicated team; the template and designs remain in use. Assisted IT with security audits and took on Cloudflare DNS and HTTPS for 400+ domains.
- Connected AI agents to the CMS through its MCP server (330+ tools) on test and development tiers only, under a written playbook: audit first, save as draft, batches of 50, review between batches. Project manager with outside agencies on features and brand guidelines.

Service Operations Manager / Application Developer

Global hardware manufacturer · 2016 – 2022

- Extended the operations platform I had started in my first stint and updated its PHP stack; it grew into one PHP and MariaDB platform of 70+ tools with five back ends, used by technicians, QA and managers. Built the shop-floor imaging application: a unit configuration went from one an hour on hand-made USB drives to 12 to 24, dozens at once. By May 2022 its record counters set upper bounds of about 805,000 order status entries and 61,000 imaging sign-ins.

- Production tracking with order dashboards, status priorities, a work timer and serial histories; repair, RMA and corrective-action tracking; depot inventory, substitutions and end-of-life databases.
- Imaging and firmware: boot-environment imaging on the line, station setup that programs firmware identity from the mainboard, an image builder for Windows XP through Windows 10; VMware vSphere machines and snapshots to test imaging and firmware work before deployment.
- Labels, reporting and integrations: production, box and device labels as PDF; cross-department reporting; APIs against MySQL-family databases, SQL Server, Oracle, directory sign-in and mail; a WebSocket server for live dashboards.
- Project manager for site-wide processes and trainer on each new application. Back in 2016 after the agency years: 12 years with the manufacturer in all.

Digital Services Developer

Marketing agency · 2013 – 2016

- Customer-facing web for health plans and insurers: landing pages and lead funnels built from creative decks, forms wired to the marketing platform and CRM, tested against each client's browser matrix in BrowserStack.
- HTML email tested in Litmus against each client's inbox matrix and sent through Silverpop and Mailchimp; API integrations with client systems.

Level III Support Specialist / Application Developer

Global hardware manufacturer · 2007 – 2013

- Started the service operation's internal platform: the support knowledge base and imaging system.
- Ported legacy ASP.NET support tooling to PHP.
- Trainer for authorized service providers.

OTHER PROJECTS

- Text-to-SQL chat on local models (in progress): built the eval first (12 questions, hand-checked SQL, scored by running each query) and tested 14 models; the pick answered 11 of 12. The same eval showed the prompt was the bigger problem (5 of 12 through it, 9 of 12 neutral): removed a hidden date filter and swapped 139 fixed examples for retrieval of the 12 closest, cutting the prompt from about 22,000 to 9,700 tokens.

SKILLS

Languages: C# and .NET (ASP.NET, .NET 10) · PHP 8 · SQL (T-SQL) · TypeScript and JavaScript · Python · Rust · Kotlin · PowerShell · Bash
Front end: React, Lit and Svelte · htmx · Bootstrap · responsive web · Tauri desktop apps
Data: SQL Server · MariaDB and MySQL · Oracle · SQLite · Redis · query tuning · text-to-SQL · PostgreSQL for self-hosted services
Delivery and operations: Docker and Docker Compose · GitHub Actions · Azure DevOps · Terraform on AWS · Azure · Cloudflare DNS and TLS · Entra ID SSO · Linux · Proxmox VE (QEMU, LXC, cloud-init) · VMware vSphere · Caddy and Apache · Uptime Kuma
Testing and security: PHPUnit · Playwright · parity and regression suites · Semgrep · Gitleaks · ESLint · PHPStan
Applied AI: Local LLM integration · execution-scored evals and model selection · prompt diagnosis · MCP servers and tool use · Claude Agent SDK · Claude Code, Codex, OpenCode · vLLM, Ollama and MLX
Platforms: Umbraco · Kentico and WordPress (migrations) · Google Analytics · ActiveCampaign · Salesforce integrations · BrowserStack · Litmus · Silverpop · Mailchimp
Leadership: Project management with in-house teams, outside agencies and freelance developers · production management · people management · training

EDUCATION AND CERTIFICATIONS

20+ years of professional software development in lieu of a degree. CompTIA A+ (2005) and Network+ (2006) · Red Hat RHCT and RHCE, RHEL 4 (2007, not current) · Microsoft Certified Professional · Umbraco developer training (2023).