

Daniel C. Richardson

Applied AI Engineer

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Summary

Senior software engineer and technical lead, 30 years shipping production software across manufacturing, aerospace, logistics, wearables, and clinical diagnostics. Since January 2026 I have run an independent practice operationalizing agentic development: specs, architecture, LLM orchestration, cost-aware model selection, and review discipline, applied to a suite of products now in production. Before that I led teams, mentored developers, and delivered AI and machine learning work inside HIPAA and FDA regulated environments. I want to do that work inside a team.

My throughline across every domain is the same: drop into an unfamiliar environment, listen to the people who have the problem, translate ambiguous needs into a system that ships, and own the outcome.

Technical Skills

AI, agentic development, and ML LLM orchestration, AI agents, agentic workflows, prompt engineering, RAG, cost-aware model selection, spec-driven generation, evaluation and review discipline, HIPAA-compliant LLM deployment, Claude and OpenAI APIs. Clustering, association rules, random forests, exploratory analytics on clinical datasets, Power BI, Tableau.

Primary languages (written cold, daily) C#/.NET, Python, TypeScript, JavaScript

Shipped production applications with (agent-assisted; I architect, direct, review, and debug) Swift, Kotlin, SQL, C++, Go, PHP

Platforms and data .NET / native AOT, React, Astro, Node, WPF/XAML, Xamarin, QT/QML, Angular. Cloudflare Workers and edge runtime, Azure, microservices, GitHub Actions, Tailscale. SQL Server, PostgreSQL, MongoDB, Snowflake, Redis, Entity Framework.

Leadership and process Technical leadership, mentoring developers, code review, managing contractors, defining SDLC practices, stakeholder discovery and translation, legacy modernization.

Regulated environments HIPAA healthcare, FDA medical devices, FAA and ITAR aviation, government compliance.

Professional Experience

Founder and Principal Engineer | Throughline Technical Services, LLC

January 2026 - Present

- Built and shipped a suite of production software solo, directing AI coding agents through spec, architecture, implementation, and review. I read, review, and debug everything that ships.
- Built Latticeflow, a single-binary .NET native AOT CLI driving multiple AI coding agents through a deterministic plan, implement, review, ship workflow backed by a ticket system. Gate provers verify that a passing check is capable of failing, so a vacuous test never reads as confidence. Turned ad-hoc AI chat into repeatable, auditable engineering and cut the cost of agent-driven work by roughly 10x.
- Ran statistical analysis of token cost against model choice and prompt structure to keep agentic systems cheap and reliable in production. The entire personal stack runs for about two dollars a month.
- Built native iOS, native Android, and web clients against one shared wire contract for a personal-inventory and peer-to-peer lending product, including on-device AI for camera-based cataloging. In pre-launch testing.
- Shipped Johnny Solarseed (two open-source Home Assistant integrations on HACS, 19 releases, plus an LLM-backed calculator that parses real utility bills), Loomwork (open-source Astro publishing framework), Sqzarr (self-hosted GPU-accelerated transcoder, single Go binary), and an AI code-review tool with selectable reviewer personas.

Technical Lead, Systems Modernization | ZRT Laboratory (Clinical Diagnostics, HIPAA)

February 2025 - January 2026

- Led AI initiatives including a HIPAA-compliant document scanning pilot using OCR and LLM integration for automated data extraction from clinical documents.
- Built exploratory analytics using machine learning (clustering, association rules, random forests) to identify patterns across clinical hormone testing datasets, and custom extraction tools that cut researcher processing time substantially.
- Led a company-wide initiative to unify siloed data and drive analysis-backed decisions, introducing Power BI and Tableau. Defined SDLC practices to bring predictability to development.
- Sat with stakeholders across research, operations, accounting, shipping, and customer service. Observed, asked questions, and listened before architecting anything.

Senior Software Developer, Technical Lead | LiquidWire (Wearable Technology)

March 2023 - September 2024

- Architected and wrote the core C#/.NET software for Bluetooth cloud-connected clothing, owning communication and system integration.
- Took ownership of a high-risk VR product initiative: mapped dependencies, identified the critical path, delivered the MVP on time including stretch goals.
- Managed external contractors and worked directly with customers to document requirements, set expectations, and deliver on time.

Senior Software Developer | OIA Global (Logistics)

June 2021 - March 2023

- Modernized legacy .NET logistics software for a post-Covid supply chain and led the Workday integration across business systems.
- Built systems for reliable data transfer between accounting, billing, and shipping platforms, converting logistics rules into working software alongside stakeholders.
- Mentored developers on enterprise software practices and code quality.

Senior Software Developer | Datto (Backup and Security)

October 2019 - January 2021

- Developed bare-metal restore capability bringing a PC from dead to live in minutes for ransomware-affected businesses, and backup software protecting against ransomware.
- Designed a system to apply security updates without disrupting active user operations.

Senior Software Developer, Team Lead | Revelar (Medical Device, FDA-regulated)

September 2016 - June 2019

- Led device software for a breath analysis system detecting aldehydes, integrating sensors and chemical injection processes, and negotiated interoperability agreements with firmware and hardware teams.
- Translated complex sensor data into actionable clinical information for end users.
- Mentored junior developers on architecture, code quality, and professional growth.

Systems Engineer | Jeppesen (Boeing) (Aviation, FAA and ITAR)

August 2014 - September 2016

- Designed and developed C#/.NET flight routing software compliant with air traffic control regulations. Created “Route Snippets,” which streamlined route selection and reduced human error.

Earlier

- **Software Developer | 4-Tell (SearchSpring)**, 2012 - 2014. C#/.NET product recommendation engine for e-commerce; Azure microservices with dynamic scaling and Redis caching.
- **Software Developer | HydroLogics (Hazen & Sawyer)**, 2008 - 2012. Decision-support system for managing New York City’s drinking water reservoirs, built with scientists, engineers, and government stakeholders.
- **EHS, Manufacturing and QA Engineer | Hewlett-Packard**, 1995 - 2005. HP DeskJet design and manufacturing; led data-driven improvement programs across international sites; Voice of Customer.

Education

- **Master of Engineering**, Civil Engineering, Portland State University
- **Masters Program**, Industrial Engineering (Human Factors), Penn State University
- **Bachelor of Science**, Mechanical Engineering, Rochester Institute of Technology

Selected Work

Full write-ups, live links, and source at **throughlinetech.net/#projects**

- **Latticeflow** - deterministic CLI driving AI agents through plan, build, review, ship. .NET native AOT.
- **Johnny Solarseed** - solar and energy-rate tooling; 2 HACS integrations, 19 releases. Python, Home Assistant.
- **Loomwork** - open-source publishing framework powering the portfolio. Astro, Cloudflare.
- **Sqzarr** - self-hosted GPU-accelerated media transcoder, no Docker. Go, React.
- **RemoteDeploy** - builds, signs, and serves an iOS app to any iPhone in ~10 seconds. Swift, macOS menu bar.