

Shawn Carr

PRINCIPAL SOFTWARE ARCHITECT

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Location: Fairport, New York

SUMMARY

Hands-on Principal Architect with 20+ years of experience engineering high-performance, zero-fail distributed systems and cloud infrastructure. Specialized in high-security, highly regulated industries like FinTech, designing secure platforms from the ground up that scale to support billions of dollars in transaction volume. Deep expertise in Zero-to-One product architecture, driving products from conception to production—including building out compliance frameworks (SOC2 Type II), robust policy implementations, and automated cloud infrastructure. Expert in edge and serverless architectures (Cloudflare Workers, Hono, Drizzle ORM, D1/Neon), Node.js/TypeScript backend services, and multi-cloud DevOps.

PROFESSIONAL EXPERIENCE

Principal Software Architect at Sharp Notions, LLC

2025-07 — Present

Lead platform strategy, cloud infrastructure orchestration, and Node.js backend scalability.

- **CLOUD & INFRASTRUCTURE STRATEGY:** Primary technical authority for high-stakes initiatives, designing resilient, cloud-native architectures on AWS/GCP (Docker, Terraform), multi-tenant VPCs, and automated CI/CD pipelines.
- **HIGH-THROUGHPUT NODE.JS APIS:** Lead development of concurrent backend systems using 13+ years of Node.js/TypeScript depth; profile and optimize event-loop delays, garbage collection, and memory leaks in production.
- **SERVERLESS & EDGE ARCHITECTURE:** Designed the zero-to-one MVP for RefiDesk (<https://refidesk.com/>) and other edge systems using Cloudflare Workers (a dozen micro-workers), Hono, Drizzle ORM, and Neon Postgres, delivering sub-50ms calculations with zero server overhead.
- **EVENT-DRIVEN PIPELINES:** Build asynchronous messaging queues using Cloudflare Queues, RabbitMQ, SQS, and Redis to handle high-frequency workflows and real-time microservices state synchronization.
- **STANDARDS & MENTORSHIP:** Drive engineering quality across teams by establishing RFC design reviews, automated security/vulnerability scans, and mentoring senior staff in distributed system patterns.
- **AI-ASSISTED DEVELOPMENT:** Leverage modern LLMs (Claude, Gemini) and Copilot as coding assistants to accelerate technical planning, perform deep self-reviews, and validate architectural edge cases.
- **CRISIS RESOLUTION & RESCUE:** Serve as the final technical escalation point for critical production outages, diagnosing and correcting complex runtime errors and bottlenecks under strict SLAs.

Founding Principal at Sharp Notions, LLC

2008-04 — 2025-07

Deep product ownership, \$Billion+ FinTech systems engineering, and implementation of SOC2 compliance frameworks.

- **FINTECH PRODUCT ARCHITECTURE:** Architected refinancing and in-school loan origination platforms for a major FinTech lender processing billions of dollars; built secure credit bureau (Experian, Equifax) and payment gateway (ACH, Stripe) integrations.
- **SOC2 COMPLIANCE & SECURITY:** Led end-to-end design, policy drafting, and implementation of complete SOC2 Type II compliance frameworks, engineering automated security configurations, IAM access layers, and SIEM logging.
- **RELATIONAL DATABASES & ETL:** Designed and tuned high-concurrency PostgreSQL and MySQL database layers (indexing, connection pooling, replica routing) and built secure ETL data pipelines for complex financial migrations.
- **CLOUDFLARE & AWS DEVOPS:** Managed secure multi-cloud deployments (AWS, GCP, Azure); built automated CI/CD networks (GitHub Actions, ArgoCD, Jenkins) to deploy and monitor hundreds of custom client platforms.
- **STRATEGIC CONSULTING & LEADERSHIP:** Partnered directly with client CEOs and CTOs to guide build-vs-buy software evaluations, audit infrastructure cost footprints, run technical due diligence, and keep team technical debt low.

Software Developer Consultant at Croop-LaFrance

2008-01 — 2011-12

Provided specialized software consulting at The Gleason Works, contributing to their high-scale Global Software Project and integrating complex legacy enterprise business logic.

- **SYSTEM OPTIMIZATION:** Refactored legacy system modules to improve calculation accuracy, reduce computational overhead, and streamline data sync pipelines across international database instances.

Director of Technology at FocalPop

2009-06 — 2010-12

Managed full-stack development, server infrastructure, and database clusters for a fast-paced technology platform, focusing on high availability and database performance optimization.

- **INFRASTRUCTURE VIRTUALIZATION:** Led the migration from bare-metal servers to early cloud/virtualized environments, improving service recovery speeds and scaling API capacity to handle traffic spikes.

IT Manager

2004-06 — 2009-09

at **Tarware, Inc**

Directed all aspects of IT infrastructure, security protocols, and operational technology systems for a specialized financial/software reporting company.

- **SYSTEM AUDITING & SECURITY:** Established regular data backup schedules, disaster recovery blueprints, and firewalls to secure client financial reporting databases against vulnerability vectors.

TECHNICAL SKILLS

Languages	Frameworks & Libraries
Node.js, TypeScript, JavaScript, Go (Golang), Rust, SQL, HTML/CSS	Hono, Drizzle ORM, Express, Astro, React, Next.js, Vite
Cloud & Serverless	DevOps & Infrastructure
Cloudflare Workers, Cloudflare KV/D1/R2, AWS (EC2, S3, RDS, SQS, VPC), GCP, Vercel, Neon Postgres	Docker, Terraform, Kubernetes, GitHub Actions, CI/CD (ArgoCD, Jenkins), IAM Security, VPC Networking
Security & FinTech	Architecture & Engineering
SOC2 Type II Compliance, SIEM Logging, PCI-DSS, Credit Bureau Integrations (Experian, Equifax), Payment Gateways (Stripe, ACH)	Distributed Systems, Zero-to-One Architecture, Event-Driven Pipelines, Database Tuning & Indexing, API Design, AI-Assisted Development

LICENSES & CERTIFICATIONS

GitHub Actions — GitHub	Issued 2024-06 · Expires 2027-06
Prior Professional Credentials	
Amazon Web Services Developer - Associate — Amazon Web Services (AWS)	Active: 2020-04 — 2023-04
Docker Certified Associate — Docker, Inc	Active: 2018-07 — 2020-07
Google Mobile Sites — Google	Active: 2017-05 — 2018-05
Google AdWords Certification - Video Advertising — Google	Active: 2017-03 — 2018-03
Google Analytics — Google	Active: 2017-02 — 2018-08
MCSD: Web Applications — Microsoft	Active: 2013-10 — 2015-10

KEY PROJECTS & CORE MVPS

RefiDesk – B2B Advisor student loan platform

Designed and built the zero-to-one MVP for RefiDesk (<https://refidesk.com/>), a B2B SaaS platform empowering financial advisors with advanced student loan refinancing calculators and planning tools. Architected the entire application to run serverless at the edge using Cloudflare Workers, Hono web framework, Drizzle ORM, and Neon Serverless Postgres. Deployed a dozen micro-workers to achieve sub-50ms global execution times and near-zero database administration overhead.

Paidly – Employee Student Loan Benefit & Crowdfunding Platform

Architected and developed the unified backend systems and payment processors for Paidly (<https://meetpaidly.com/>), a FinTech B2B2C platform combining tax-free employer Student Loan Repayment Benefits (SLRB), 529 savings contributions, crowdfunding, and PTO buyback programs. Designed secure, automated integrations with loan servicers for real-time payment validation and settlement. Built compliance-grade tax and reporting mechanisms to manage IRS Section 127 documentation rules, ensuring zero-exposure privacy of employee loan balances to employers.

FinTech Student Loan Refinancing Platform – Core Refinancing Ledger & Underwriting Engine

Designed and developed the complete end-to-end refinancing product for a major national student loan lender. This involved building high-availability API services, credit check integration pipelines, pricing/underwriting calculations, and financial ledgering systems. The resulting platform successfully automated credit underwriting and processed billions of dollars in active loan applications with zero downtime.

In-School Student Loan Origination Platform – Compliance-Grade Student Loan App Flow

Architected the zero-to-one implementation of a modern, compliance-grade in-school student loan origination application flow. Built complex state machines to handle co-signer invitations, school certification checks, and legal document generation, adhering strictly to financial lending regulations.

RIT Brick City Weekend Ticketing & Registration – High-Concurrency Event Portal

Architected and developed the custom event ticketing, registration, and payment gateway portal for Rochester Institute of Technology's (RIT) annual Brick City Homecoming & Family Weekend (<https://www.rit.edu/brickcity/>). Engineered the high-concurrency ticket release system to handle extreme traffic spikes, processing thousands of transactions and managing complex ticket inventories for multiple concurrent events. Built the check-in and QR ticket validation systems for on-site check-ins.

Enterprise SOC2 Type II Audited Infrastructure – Compliance Engineering & Cloud Security

Drove the end-to-end security compliance transformation of an enterprise software organization. This included authoring organizational security policies, configuring automated IAM access layers, setting up centralized logging and monitoring (SIEM), and implementing secure, infrastructure-as-code (Terraform) VPC networks to achieve successful SOC2 audit compliance.

COMMUNITY & VOLUNTEERING ENGAGEMENTS

Fundraising Coordinator at Boy Scout Troop 207

Oversee fundraising campaigns, order fulfillment logistics, and inventory management for the Troop.

- **CUSTOM E-COMMERCE PLATFORM:** Designed and developed a custom, high-speed online ordering system (<https://troop207holidaywreaths.com/>) to automate holiday wreath sales, payments, and order tracking. Built using Cloudflare Workers, Hono, and Cloudflare D1 database storage, resulting in zero-maintenance overhead and immediate checkout speeds.

Treasurer at Fairport High School Drama Club Boosters

Manage financial operations, accounting ledgers, cash flows, and budget tracking for the booster organization.

- **TICKETING & DONATIONS PORTAL:** Architected and built the custom ticket sales and donations application (<https://fairportdrama.com/>) to streamline transaction collection for theatrical performances. Built on the modern serverless edge using Cloudflare Workers, Hono, and Cloudflare D1 to ensure transactional safety, sub-50ms page speeds, and zero host fees.