

Christopher Da Silva

Principal Product Engineer | AI Architect

Toronto, Canada · Remote · <https://www.linkedin.com/in/christopher-da-silva-6a0ba04b/>

Summary

Forward-deployed Principal Engineer and AI Platform Architect with 13+ years of experience owning complex systems from problem discovery through production. Specialized in deterministic AI orchestration, hybrid retrieval pipelines, and long-running agent architectures operating in real-world, customer-embedded environments. Proven at translating ambiguous customer needs and real-world signals into production-grade AI systems, partnering closely with researchers, and shipping iteratively with strong engineering rigor.

Core Competencies

- **Autonomous & Agentic Systems:** Long-running agents, goal-seeking orchestration, mutable predicates, convergence logic, multi-agent coordination
 - **AI & Retrieval Systems:** Hybrid retrieval (BM25 + embeddings), RAG pipelines, pgvector, semantic search, recall/precision tuning
 - **Backend Engineering:** Node.js, TypeScript, NestJS, REST/GraphQL APIs, Postgres (RLS, performance tuning), Redis
 - **Cloud & Infrastructure:** Terraform, Docker, Kubernetes, AWS, Azure, observability (metrics, traces, logs), cost guardrails
 - **Architecture & Platforms:** Multi-tenant SaaS, RBAC, API platform design, domain-driven services, high-availability systems
 - **Leadership:** Technical strategy, whitepaper authoring, mentoring senior engineers, cross-functional execution
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Experience

Founder & Principal Engineer — Impulse.dev

Autonomous Engineering Teammate Platform

2025 – Present · Remote

- Built an **autonomous engineering agent** that functions as a forward-deployed teammate, accepting open-ended objectives (features, designs, refactors) and iterating autonomously until convergence.
- Designed a **goal-seeking orchestration layer** with mutable predicates, dynamic plan rewriting, and evaluation loops aligned to real-world success criteria.

- Implemented **long-running agent workflows** spanning design interpretation, code generation, refactoring, test evolution, and self-correction across extended executions.
- Owned **task formats, evaluations, and execution semantics** used to measure progress, detect failure modes, and drive iteration.
- Engineered **local execution and integration pipelines** allowing agents to operate directly against real production codebases.
- Built cost-aware scheduling, rate-limit resilience, and failure recovery to support production-grade autonomous runs.
- Served as technical owner bridging product intent, system architecture, and execution quality.

Tech: TypeScript, Node.js, LLM APIs, autonomous agent orchestration, evaluation loops, local execution environments

Founder & Principal Engineer — SymptomLoop

Structured AI Clinical Triage Platform

2025 – Present · Toronto / Remote · <https://symptomloop.com>

- Partnered with clinicians and domain experts to translate **real-world intake and triage workflows** into deterministic, production-ready AI systems.
- Architected a **Structured Symptom & Intake Retrieval (SSIR)** engine with explicit success criteria, reproducibility guarantees, and audit-ready decision traces.
- Designed task formats and orchestration logic including **confidence delta/plateau detection**, multi-track session management, and decision-trace logging for regulated environments.
- Built and tuned **hybrid retrieval pipelines** (BM25 → embedding re-rank via RRF) aligned to clinical recall/precision requirements.
- Owned end-to-end **API platform architecture (NestJS)** including RBAC, rate limiting, Postgres RLS, indexing, and performance tuning.
- Authored the **SSIR Whitepaper**, formalizing orchestration semantics, evaluation criteria, and reproducibility standards.

Tech: NestJS, TypeScript, Postgres, pgvector, Redis, LLM APIs, Terraform

Founder & Platform Architect — The Daily Shallot

Fully Autonomous AI-Run Satirical Media Platform

**2025 – Present · Remote · <https://thedailyshallot.com>

- Architected and operated a **fully autonomous media platform** where LLM-based agents perform topic selection, editorial judgment, content generation, revision, and publishing.
- Designed a **multi-agent editorial architecture** assigning autonomous roles (writer, editor, critic, publisher) coordinated via shared state and structured task contracts.
- Built an end-to-end **LLM-driven content pipeline**: ideation → drafting → critique → revision → scoring → release.

- Implemented **engagement-aware feedback loops** enabling agents to adapt tone, format, and topical focus based on reader interaction signals.
- Engineered platform infrastructure including content storage, analytics ingestion, SEO automation, release scheduling, and adaptive monetization logic.

Tech: Next.js, serverless APIs, LLM APIs, multi-agent systems, analytics

Staff Software Engineer — Anheuser-Busch

2024 – 2025 · Remote

- Led development of API and GraphQL services supporting logistics, inventory, and data pipelines at global scale.
 - Introduced caching strategies, schema-first API design, and performance optimizations improving request latency by ~40%.
 - Collaborated with DevOps on CI/CD pipelines, staged rollouts, and production stability initiatives.
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Senior Software Engineer — TD Bank

2023 – 2024 · Toronto, ON

- Architected Azure-based event-driven microservices supporting financial transaction workflows.
 - Designed domain-driven services with strong RBAC and compliance alignment.
 - Delivered audit-ready CI/CD pipelines using GitHub Actions and Azure DevOps.
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Senior Backend Engineer — Bayshore Healthcare

2021 – 2023 · Toronto, ON

- Built patient management and scheduling APIs integrating with EMR systems.
 - Designed and optimized Postgres schemas for high-volume healthcare operations.
 - Implemented monitoring and alerting to ensure system reliability and compliance.
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Earlier Experience (Selected)

Head Engineer — QuantGate Systems

Trading Platforms & Market Data

- Led full-stack development of real-time trading services and analytics systems.
- Designed Python backtesting pipelines, anomaly detection, and production-grade CI/CD.

Lead Engineer — Bridgerock

Fiat P&L & Crypto Exchange Infrastructure

- Built the first fiat P&L tracker across major crypto exchanges.
- Led architecture and delivery of data reconciliation and trading-adjacent services.

Frontend Tech Lead — Indigo Books & Music

React / TypeScript · Design Systems & Performance

- Led frontend architecture for high-traffic retail and e-commerce surfaces.
- Owned design system evolution, performance optimization, and frontend standards.

Senior React Engineer — TELUS

Enterprise Frontend Platforms

- Delivered large-scale React applications within a regulated telecom environment.
- Focused on performance, accessibility, and shared component libraries.

Software Engineer — TJG

Vue / Node Engineering

- Developed full-stack features using Vue and Node.js.
- Contributed to API development and frontend performance improvements.

Software Engineer — Lottery.com

React Native · Early Career

- Built early mobile features and APIs for a high-growth consumer platform.
- Worked across React Native, backend integrations, and production releases in a fast-moving startup environment.

Education

B.Sc. Computer Science — Toronto, Canada

Highlights

- **Autonomous Systems Builder:** Designed production-grade long-running agents across engineering, healthcare, and media domains.

- **AI Platform Architect:** Built deterministic orchestration engines and hybrid retrieval pipelines with auditability guarantees.
- **Technical Author:** Authored formal whitepapers defining system semantics, safety, and reproducibility standards.
- **Engineering Leader:** Mentored engineers and led architecture decisions across startups and enterprise environments.