

Liam Ellis

Senior Applied AI / Platform Engineer · Agentic Systems, RAG, Evals · Python & TypeScript

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SUMMARY

Senior software engineer with 10+ years shipping production systems and leading teams, now focused on applied AI platforms. Built a six-agent operations system grounded in 200+ source files, production enrichment pipelines over 6,000 records, and a civic platform that served 1.2M requests at 99.99% uptime (+445% above projections). Strong in Python, TypeScript, APIs, RAG, evaluation, guardrails, authentication, and cloud delivery; translates ambiguous business workflows into reliable, measurable products.

EXPERIENCE

AI Systems Consultant (Consulting engagement)

Jan 2026 – May 2026

Lundstrum Performing Arts — 501(c)(3) nonprofit arts organization, North Minneapolis — production multi-agent operations platform

- Architected a six-agent operations system on Anthropic's Claude API — marketing, grant writing, donor communications, events, analytics, and content. Coordination is explicit: a protocol file defines hand-off rules, human-review triggers, and what each agent is blocked from doing autonomously.
- Engineered the context layer: 200+ organizational files (site pages, 35+ blog posts, annual report, rehearsal transcripts) structured into a queryable corpus — cutting grant-proposal research from 2–3 hours of manual PDF and site digging to a single query returning cited organizational data.
- Ran source-conflict QA across the corpus — reconciled a 30%/40% scholarship discrepancy between sources, corrected bad records, renamed misidentified files — so agent citations were trustworthy rather than merely voluminous.
- Operated the system end-to-end to produce shipped work: 11 standalone HTML experiences, a 33-post social calendar sequenced to performance dates, and a full donor campaign — output volume typical of a small marketing team, delivered by one engineer plus the agent layer.
- Shipped a Next.js 15 / React 19 operations dashboard consolidating gala logistics, campaign tracking, board directory, grant pipeline, and task management — TypeScript strict mode, 12+ chart types, and 18:1 text contrast against a 4.5:1 WCAG AA requirement.

multi-agent orchestration · context engineering · Claude Code · Anthropic API · Next.js 15 · React 19 · TypeScript · Tailwind CSS

Senior Software Engineer (Contract)

Apr 2025 – Aug 2025

Experience Maple Grove

- Sole engineer on a city-backed Restaurant Week platform — delivered a production PWA in 4 months against an immovable launch date: QR check-ins with 24h token expiry, geofencing, real-time leaderboards, raffle mechanics, RBAC, and admin dashboards for 40+ venues onboarded with zero hardware or staff training.
- Hit 3,557 visitors and 399 completed punch cards in week one; grew to 6,066 visitors (+445% above projections), 1,055 verified sign-ups, and 1.2M requests — 99.99% uptime, zero security incidents.
- Cut leaderboard queries from a >5s worst case under peak load to consistently <100ms using PostgreSQL materialized views on a 30-second refresh plus Redis caching; 95+ mobile performance score, and the platform was adopted as reusable City of Maple Grove civic infrastructure.

Next.js · TypeScript · Supabase · PostgreSQL · Clerk · Redis · Vercel · Tailwind CSS

Senior Software / AI Engineer (Contract)

May 2025 – Jun 2025

FLS USA

- Engineered Python/OpenAI enrichment pipelines over 6,000+ B2B records — structured extraction and intent scoring yielding 500+ qualified leads with geo-targeting and customized outreach.
- Gated all agent output behind deterministic checks before human review — schema validation, extraction-quality evals, CI gates — catching malformed records before any customer-facing send.
- Productized AI workflows converting unstructured business context into repeatable outbound and marketplace operations using Firecrawl, Exa, OpenAI, and the Vercel AI SDK.

Python · TypeScript · Next.js · OpenAI SDK · Vercel AI SDK · Firecrawl · Exa API · PostgreSQL

Senior Software / AI Engineer (Contract)

Mar 2025 – May 2025

WinWinX + Agency Underground

- Extended AI brand-extraction tooling into context-to-content workflows turning raw inputs into campaign-ready email and landing-page assets.
- Cut campaign setup from 3 days to 15 minutes, letting non-technical operators launch safely without manual research overhead.
- Lifted lead quality and targeting accuracy ~20% through data cleanup, enrichment, and automation.

Next.js · Python · OpenAI SDK · Vercel AI SDK · v0.dev · React Email · Resend

Senior Software / AI Engineer (Consulting engagement)

Sep 2024 – Feb 2025

Lundstrum Performing Arts

- Built an AI-powered AV analysis pipeline on AssemblyAI, OpenAI, and Anthropic APIs generating structured rehearsal notes, action items, and performance feedback from stage production audio.
- Centralized scattered institutional knowledge into an AI-backed knowledge base, cutting cross-training time by weeks across 30+ staff.

Python · AssemblyAI · OpenAI API · Anthropic API · Notion

Senior Software Engineer

OMG.re

Nov 2023 – Oct 2024

- Managed 4–10 remote engineers across project planning, platform architecture, and roadmap execution — property management platforms, ETL ingestion pipelines, and tenant portals for enterprise real estate client Brookfield.
 - Built custom e-commerce and HR software for AgileOne and Gentle Monster; lifted Matsuda Eyewear page performance 60% through rendering and optimization work.
 - Consolidated 11 legacy production sites into one Next.js monorepo — 50% faster delivery, 75% lower cost.
- React · Next.js · TypeScript · Shopify · GraphQL · PostgreSQL · MySQL · Redis

Senior Software Engineer (Contract)

Knock Inc

Aug 2023 – Nov 2023

- Sole engineer on a headless CMS and showcase platform under a short timeline — owned build and deploy end-to-end, decoupling content from frontend for editorial flexibility and maintainability.
- Next.js · TypeScript · React · WordPress Headless · WPGraphQL

Senior Full-Stack Engineer / Platform Lead

Freeman

Jan 2019 – Dec 2023

- Joined as backend engineer building a GraphQL API for Amazon Alexa chatbot experiences, setting schema and data-access patterns for conversational workloads.
 - Promoted to lead the frontend team on the company's mission-critical internal platform; scaffolded the initial core database models the platform was built on.
 - Single-handedly designed and built the full authentication and authorization layer governing internal and external API access via Okta SSO.
- TypeScript · Node.js · PostgreSQL · AWS Lambda · AWS EC2 · CloudWatch · Amazon CDK · GraphQL

Senior Full-Stack Engineer

OMG.re

Aug 2017 – Nov 2019

- Launched a real-estate listings platform centralizing 10+ disparate data sources behind a unified GraphQL API; built AWS Lambda microservices with provisioned concurrency and cron-driven ETL, raising internal API integration efficiency 40% and legacy data consistency 60%.
- Node.js · AWS Lambda · CloudWatch · GraphQL · PostgreSQL · ETL

Senior Frontend Developer

IF Studio

Jan 2017 – Jul 2017

- Established the company's first CI/CD pipeline, accelerating deployment cycles 75%; led adoption of modern frontend frameworks, improving web application performance 40%.
- JavaScript · CI/CD

Full-Stack Engineer

HiKarl

Feb 2016 – Jan 2017

- Built location-based concert search with MapboxGL visualizations (+30% user engagement) and a QR-code ticketing service that acquired 3 venue clients in its first 6 months.
- JavaScript · MapboxGL

SKILLS

Agentic systems: multi-agent orchestration, context engineering, agent memory, durable execution, human-in-the-loop, custom MCP servers & tools, LangGraph, LangChain, tool/function calling, structured outputs, RAG, GraphRAG, hybrid retrieval, pgvector, evals, guardrails, latency & token-cost optimization, Anthropic API, OpenAI API, Vercel AI SDK

Languages & frameworks: Python, TypeScript, JavaScript, Node.js, React, Next.js, FastAPI, Flask, REST, GraphQL

Data & infrastructure: PostgreSQL, Supabase, Redis, KùzuDB, AWS Lambda, AWS CDK, CloudWatch, Vercel, Modal, RunPod, serverless architecture, event-driven architecture, CI/CD, Infrastructure as Code

Observability & quality: OpenTelemetry, Sentry, PostHog, Storybook, Turborepo, WCAG 2.2, Core Web Vitals

Security & auth: Clerk, Okta SSO, OAuth 2.0, OIDC, RBAC

AI-assisted development: Claude Code, Cursor, Codex, GitHub Copilot, v0.dev, spec-driven development, spec → agent → deterministic checks + evals → human security & correctness review

Working knowledge: Google ADK, Vertex AI, Gemini, AWS Bedrock

SELECTED INDEPENDENT SYSTEMS

Personal AI/RAG Workspace — Independent

Jan 2026

- Hybrid "Brain" architecture: SQLite/FTS5 + vector storage, KùzuDB graph relationships, OpenAI embeddings, and entity extraction — GraphRAG and source grounding in practice, with agent workflows spanning local macOS tools, browser automation, and cloud GPU endpoints (Modal, RunPod).

Python · SQLite · FTS5 · KùzuDB · OpenAI embeddings · GraphRAG · hybrid retrieval · durable execution

Maple Grove Restaurant Week 2025 — Digital Passport — City of Maple Grove

Apr 2025 – Aug 2025

case study · civic tech · Next.js · Supabase · Redis

The Lundstrum Memo — Lundstrum Performing Arts

May 2026

EDUCATION

University of Minnesota — Bachelor of Arts, Anthropology · 3.8 GPA

CERTIFICATES

- Full-Stack Development — Epicodus
- Ruby on Rails Certification — StartUp Institute
- Frontend Development — General Assembly

ADDITIONAL

Professional songwriting: 30+ MTV and VH1 placements; translating ambiguous creative direction into shipped work that reaches real audiences