

SUMMARY

Software engineer with 13 years of experience building production data, backend and web systems. Spent five years owning the reporting platform for a 16-program homeless-services agency, replacing days of manual report assembly with version-controlled Python that stood up to audit. Now building applied AI where calculations, citations and model decisions can be checked.

EXPERIENCE

Mar 2021 - Mar 2026	Data & IT Manager · Friendship Shelter Data platform engineering, reporting infrastructure and team leadership · Laguna Woods, CA - Built and ran the reporting platform a 16-program agency depended on: 121 Python modules and 297 notebooks feeding 25 scheduled pipelines that alert the team on failure. - Cut federal, state and local funder reports from two to three days of manual assembly to on demand by moving the calculations into version-controlled Python, so a rerun reproduces the same number. - Wrote an independent implementation of the HUD Annual Performance Report and used it to audit the vendor HMIS, surfacing defects in its Looker reports for the agency and partner agencies. - Automated Orange County's Coordinated Entry housing prioritization list as a pipeline that reconciles several HMIS sources and applies the same eligibility rules every run. - Built a role-based self-service reporting portal and the CalOptima/CalAIM connector that delivered audit-ready HIPAA client data the vendor portal could not export. - Hired and managed the data team for five years, up to four direct reports, training CS graduates into analysts who ran their own pipelines.
2014 - 2021	Owner and Web Developer · Jellyfish Development jellyfishdevelopment.com Ran a one-person web shop for local businesses and a youth-golf nonprofit (PHP, JavaScript, three.js). Contributed two merged pull requests to zenbot, an 8k-star open-source trading bot, in 2016.

SELECTED ENGINEERING PROJECTS

2026	HMIS-NL, AI analytics over homeless-services data Plain-English questions over HMIS data. The model proposes a typed request, Python computes the answer, and a validator enforcing HUD rules withholds any figure it cannot defend: 88 of 90 correctly withheld in the June 2026 router evaluation. FastAPI, React and an MCP server of 7 typed tools. alanj.dev/work/hmis-nl
2017 - present	C++23 Trading System Fourth iteration since 2017. One C++23 engine runs historical replay and the live Kraken feed through the same interfaces, with a restart-safe indicator cache and order-journal recovery reconciled against the exchange. Live orders run through a gated Python REST executor and the C++ order path stays gated. Sanitizer-clean CI on gcc and clang, 45 architecture decision records. alanj.dev/work/trading-system
2026	guru, reading app with source-locked quotations The model cites sentence ids and the exact wording is spliced from the source, so a misquote cannot be expressed. Hybrid retrieval raised top-five hits from 1 of 12 to 7 of 12 questions. TypeScript, SQLite. alanj.dev/work/guru

SKILLS

Languages	Python, TypeScript, SQL, C++23, Rust	Applied AI	LLM agents, RAG, structured outputs, MCP servers, evaluation harnesses
Backend and data	FastAPI, PostgreSQL, SQLAlchemy, pandas, ETL pipelines, Parquet, Excel automation, Tableau, Looker, Power BI	Systems	React, Next.js, Linux, Docker, Git, GCP, CMake, sanitizers (ASan, TSan, UBSan)
Domain	HMIS, HUD APR, Coordinated Entry, CalAIM/HIPAA, funder reporting		