

Alex Horton

Full-Stack Product Engineer | Applied AI + Workflow Tools | 0→1

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SKILLS

Full-Stack Engineering: Next.js, React, TypeScript, Tailwind CSS, shadcn/ui, Node, FastAPI, Python.

Backend & Database: Supabase / PostgreSQL, DuckDB, schema design, auth, REST APIs, third-party integrations, scheduled data pipelines.

DevOps & Tooling: Vercel, Docker, Git workflows, GitHub Actions CI/CD, observability and analytics instrumentation, basic GCP.

AI-Augmented Development: Daily Claude Code + Cursor dev loop, Hermes-style agent workflows, multi-agent orchestration, OpenRouter/model routing, tmux, and Obsidian/persistent context. Build internal AI tooling that rides alongside my own work.

Quantitative & ML: Scikit-learn, XGBoost, Random Forest, ensemble methods, regression, PCA, hypothesis testing, time-series analysis, walk-forward validation, feature engineering.

Product & Design: End-to-end shipping, user interviews, MVP scoping, design thinking, dashboards, data visualization.

Domains: Applied AI, workflow tools, real estate, financial markets, energy/solar, consumer/prosumer tools.

PROFESSIONAL EXPERIENCE

Builder, Full-Stack Product Engineer

Independent | Santa Cruz, CA | 2020 – Present

Propfi.live (real-estate analytics): Financial analytics tool for property managers. Portfolio performance was tracked across Appfolio CSV exports, PDFs, and ad-hoc client emails. Built a single Next.js + Supabase tool that ingests the CSVs, generates financial views, and produces shareable client reports.

Energyscout.org (consumer solar tool): Consumer-facing switch-to-solar calculator. Homeowners had no neutral way to compare installer quotes. Built an individualized calculator that combines production data, incentives, and ROI into one personalized report. Next.js, Supabase, Vercel.

Bitcoinmachinelearning.com (quant research): Public BTC analysis is dominated by chart-reading; rigorous statistical work is rare. Built a research site investigating price drivers (halving cycle, power-law fit, M2 supply) with a triple-SMA strategy backtested walk-forward at 1.8 Sharpe. Supabase + DuckDB scheduled jobs.

AI-augmented dev workflow: Each project runs with a coordinated agent/workflow system (Claude Code, Hermes-style agents, OpenRouter, tmux, and Obsidian) for context-passing, implementation support, and project memory across sessions.

Solar Market Analyst

Day One Solar | Santa Cruz, CA | 2018 – 2019

Analyzed utility, incentive, and consumption data to identify underserved segments in California multifamily and agricultural solar; built ROI models that informed community-solar go-to-market strategy.

EDUCATION & CERTIFICATIONS

California Polytechnic State University, San Luis Obispo: B.S. Liberal Arts & Engineering Studies (Technology, Sustainability, Product Design). Cum Laude. Engineering Academic Excellence Award. (2015)

MIT Professional Education: Applied Data Science Program — Leveraging AI for Effective Decision-Making (2024–2025)

Stanford Online: Supervised Machine Learning with Andrew Ng (2024)

Anthropic: Claude Code in Action (2026) | Introduction to Claude Cowork (2026) | Claude 101 (2026)

Google: Foundations of User Experience Design (2023)

SELECTED WORK

Hermes / personal agent system: Multi-agent workflow system with scoped memory, tools, Telegram, scheduled jobs, model routing, and voice summaries. Shows applied AI in a real operating routine, not just a demo.

BTC Price Driver Analysis: Quant research investigating Bitcoin returns against halving cycle, power-law fit, and M2 supply. Triple-SMA strategy walk-forward backtested at 1.8 Sharpe. Lives at bitcoinmachinelearning.com.

MIT ADSP Capstone (used-car ML pricing): Ensemble pricing model for used vehicles. Compared linear baselines against XGBoost, Random Forest, and Gradient Boosting; tuned for generalization, not leaderboard fit.

Hull Tactical Kaggle (S&P forward returns): Random Forest classifier predicting next-day S&P direction, beating the competition's baseline Gaussian Mixture model on the public leaderboard with feature engineering on macro and technical inputs.

Trading & markets practice: Active participant in equities and crypto markets since 2019 — source of the domain fluency behind the BTC research site, the ML pricing work, and how I think about signal-vs-noise in product analytics.