# Alexander Hahn

**Applied AI & Research Engineering**

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Engineer with a quantitative research background building agent orchestration systems, model integrations, and evaluation tools. Experience spans financial forecasting infrastructure and personal AI applications.

## EDUCATION

**Cornell University** May 2014
Bachelor's in Mathematics, concentration in Mathematical Physics

## EXPERIENCE

**PharVision Advisers** May 2024 – Sep 2026
*Quantitative Portfolio Manager* Miami, FL

- Built the core Python walk-forward backtesting and forecasting pipeline from scratch over existing data/ETLs, connecting model tuning, refitting, and out-of-sample evaluation.
- Contributed to CrewAI and agent workflows that generated feature proposals for equity-return forecasting models.
- Developed approximately ten equity signal families and integrated selected researcher contributions into regularized forecasting models.
- Automated production model refreshes in Airflow; built Polars workflows and Dash views for data, model, forecast, and portfolio diagnostics.
- Developed portfolio optimization using BARRA's USE4S, USFAST, and GEM3 risk models for factor-constrained target portfolios.

**Bot Lab LP** (Schonfeld external manager) Apr 2019 – May 2023
*Quantitative Trader* New York, NY

- Developed and deployed Haskell/Python signal pipelines and R research tools for a US equity statistical arbitrage strategy with a $100 million initial allocation.
- Helped develop an automated trading CLI; held final basket approval and executed $12 billion through four brokers.

**Bridgewater Associates** Dec 2016 – Mar 2019
*Investment Engineer & Production Integration Engineer* Westport, CT

- Led six engineers supporting backtesting and signal-generation platforms; extended researcher-facing APIs and diagnosed research and production issues.
- Replaced manual Brazilian derivatives data workflows with automated implementations in research and production.

**Nomura** Aug 2014 – Nov 2016
*Technology Analyst* New York, NY

- Helped automate equity-linked note processing and maintain consistent securities reference identifiers.

## SELECTED PERSONAL PROJECTS

**Agent orchestration & command center** Adapted Anthropic's orchestrator/worker patterns for Claude Code and Codex, with separate contexts per plan session. Built idea capture, invocation and model/effort controls, run monitoring, review/shipping workflows, and plan retrospectives. Use the system across personal software and research projects.

**Music application & evaluation** Built an application integrating audio separation, transcription, editable notation, and an LLM assistant, with versioned evaluation metrics, replayable experiment artifacts, and synchronized audio/score inspection.

**Personal website (ongoing)** Building and extending a live personal website through agent-assisted workflows, with additional AI integrations in development.

## SKILLS & TECHNOLOGIES

**Programming** Python, R, C++, Haskell
**Modeling & evaluation** scikit-learn, GLM, regularized regression, temporal validation, signal ensembles, CVXPY, MOSEK
**Data & software** Polars, Delta Lake, Airflow, Docker, Git, Linux, AWS
**Applied AI** LLM APIs, agent orchestration, Claude Code, Codex, experiment and evaluation workflows