

# Colby Reichenbach

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## SUMMARY

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Data Scientist and Analytics Engineer with experience building analytical products, production ML systems, and AI-assisted decision-support workflows across sports, retail, and real estate. Strong background in SQL, Python, experimentation, data modeling, and translating complex event and product data into actionable insights. Built systems spanning model governance, forecasting, sports analytics, and evaluated AI workflows with telemetry, safety controls, and human-in-the-loop review.

## SKILLS

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**Analytics & Experimentation:** SQL, Python, PostgreSQL, Pandas, NumPy, Hypothesis Testing, A/B Testing, Feature Engineering, Data Modeling, SHAP

**ML & Evaluation:** XGBoost, Scikit-learn, Optuna, MLflow, dbt, Model Validation, Champion/Challenger Testing

**Product & Data Systems:** TypeScript, React, Next.js, FastAPI, Docker, Redis, Celery, Kafka, Git, Dashboarding, Reporting Automation

**AI & Analytics Tools:** Generative AI, Large Language Models, Prompt Engineering, LLMops, AI-Assisted Development (Claude Code, Codex), OpenAI API, Promptfoo, AI Automated Workflows, Agentic Development

## PROJECTS

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### AiBS | Baseball Analytics Intelligence Platform [abs-observatory.vercel.app](https://abs-observatory.vercel.app)

- Built a baseball analytics product centered on MLB's ABS challenge system, using PostgreSQL, Python ETL, and TypeScript to model and serve event-level sports data across games, teams, and umpires.
- Developed analytical product experiences for live, pregame, and final-game workflows, translating challenge timelines, strike-zone events, and review behavior into interpretable sports-performance insights.
- Integrated AI-assisted summaries and bounded analytical workflows to support deeper interpretation of baseball outcomes while preserving scoped access, telemetry, and reviewability.

### SPEC-NYC | Production Automated Valuation Model [github.com/ColbyRReichenbach/SPEC-NYC](https://github.com/ColbyRReichenbach/SPEC-NYC)

- Built end-to-end MLOps pipeline on 1M+ real NYC property transactions: Pandera data contracts, XGBoost with Optuna tuning, MLflow experiment tracking, and champion/challenger model arena with fail-closed promotion gates and human approval workflow.
- Implemented segment-level evaluation scorecards (PPE10, MdAPE,  $R^2$ ) by property tier, SHAP explainability artifacts, drift monitoring, and release readiness validation.

### ShelfOps | Retail Inventory Intelligence Platform [github.com/ColbyRReichenbach/shelfops](https://github.com/ColbyRReichenbach/shelfops)

- Architected a full-stack inventory analytics platform using FastAPI, PostgreSQL/TimescaleDB, Celery, Redis, and Kafka-compatible event streaming to support forecasting, reporting, and operational decision-making.
- Built forecasting and analytics workflows that transformed raw inventory and demand signals into stakeholder-facing dashboards for business, data, and store-operations users.

### Pulse Tracker | Multi-Tenant AI Coaching SaaS [pulse-workout.vercel.app](https://pulse-workout.vercel.app)

- Shipped a live multi-tenant AI product using Next.js, TypeScript, Supabase, Redis, and OpenAI, with production telemetry, monitoring, and user-facing workflow automation.
- Implemented AI evaluation and safety infrastructure including PII redaction, prompt injection detection, immutable audit logging, and Promptfoo test suites, demonstrating applied experience in reliable AI workflow design.

## PROFESSIONAL EXPERIENCE

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### Target — Team Member Chapel Hill, NC | Nov 2021 – Present

- Maintained inventory accuracy across thousands of active SKUs through weekly cycle counts, system reconciliation, and discrepancy resolution — operational context that directly informed the design of ShelfOps, a production retail inventory intelligence platform.

## EDUCATION

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### University of North Carolina at Chapel Hill Aug 2021 – Aug 2024

*B.S. Biology | Minor in Data Science*