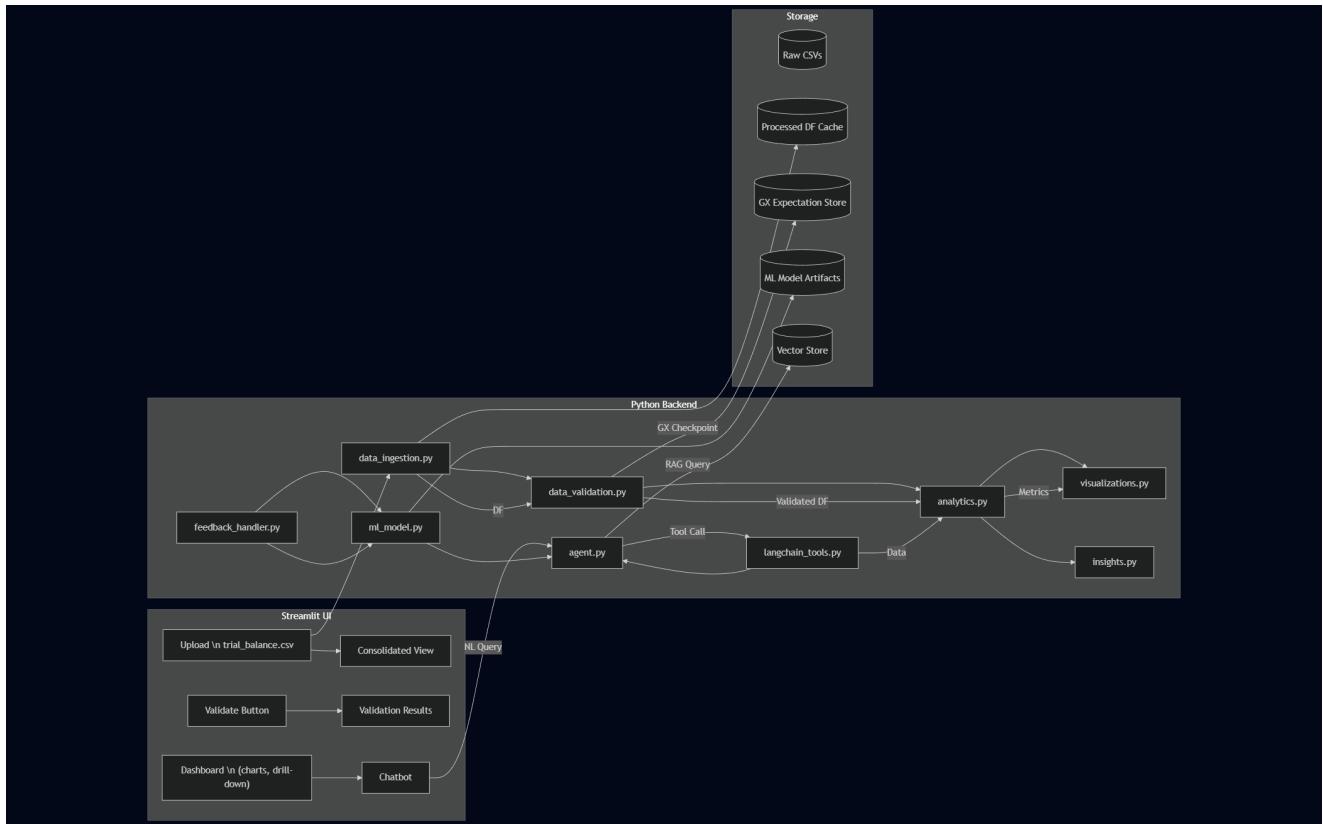


# Project Aura — Architecture

## High-level system diagram



## Components

- Streamlit UI: Uploads, validation trigger, dashboards, conversational chat.
- Data ingestion: CSV loading, schema enforcement, consolidation.
- Validation: Great Expectations suites, checkpoints, Data Docs.
- Analytics: Variance, review status, SLA deviation, hygiene metrics.
- Visualizations: Plotly charts with cross-filtering and drill-down.
- Intelligence: Scikit-learn model, retraining with feedback.
- Agent: LangChain with structured tools, function calling, RAG over project FAQs.
- Stores: raw/processed data, expectation store, model artifacts, vector store.

## Quality pillars

- CI/CD with lint/type/test/coverage gates.
- Observability: structured logs, timings, error taxonomy.
- Security: bandit, dependency/license checks.
- Performance: caching, vectorized ops, latency budgets.

## Phase mapping

- Phase 1: D1 + UI uploaders

- Phase 2: D2 + GX + A1 + basic V1
- Phase 3: F1 + M1 (baseline + retraining)
- Phase 4: T1 + AG1 + advanced V1 + I1 + RAG (S5)
- Phase 5: polish, observability, demo hardening