AI-Powered Fraud Detection & Investigation

Streamlit dashboard for investigators

Deriv AI Hackathon

What is the website?

Single web app to triage, investigate, and close cases.

- A live Streamlit dashboard for fraud investigators.
- Combines ML fraud scoring + anomaly detection with explainable alerts.
  Human-in-the-loop: investigators decide; AI assists with explanations and next steps.
- Every decision is auditable; feedback can be used to retrain models.

Main features

Alert queue (sidebar): risk badge, fraud %, one-line AI explanation; sorted by risk.

Case view: timeline reconstruction, evidence tabs (transactions, geo, identity, network).

- Device/IP network graph: see accounts linked by shared devices or IPs.

Plain-language explanations: why an account was flagged, risk factors, confidence.

- Next-step recommendations from an LLM (suggestions only, no auto-labels).

Decisions: confirm fraud, mark legit, or dismiss with required reason; stored in audit trail.

Regulatory-style investigation reports and export of feedback for model retraining.

How it works

End-to-end flow.

1. System runs a fraud classifier + anomaly detector on account/transaction da ta.
- 2. Alerts appear in the queue with risk score and short AI explanation.

3. Investigator selects an alert → case view loads (timeline, evidence, networ k).
- 4. Investigator reviews evidence and optional LLM next-step suggestions.
- 5. Investigator records a decision (fraud / legit / dismiss) with a reason.
- 6. Reports can be generated; feedback is exported for periodic retraining.

Technology

- Frontend: Streamlit (Python), dark theme, wide layout.

  Backend: Fraud classifier (e.g. LightGBM), anomaly detector, Neo4j for graph features.

  Explainability: SHAP-style factors, LLM for narrative explanations and next steps.

  Data: synthetic fraud dataset; supports unlabeled pipeline and feedback retraining.

Summary

Built for the Deriv AI Hackathon.

- One dashboard to detect, explain, investigate, and decide on fraud cases.
- Explainable and auditable; investigators stay in control.
- Designed to improve over time via feedback and retraining.