Empathy Map Canvas

Online Payments Fraud Detection using Machine Learning

User: Bank Fraud Analyst / Payment Operations Team

User Persona

Attribute	Details
Name	Priya — Senior Fraud Analyst
Age	32 years old
Role	Fraud Operations at a mid-size fintech company
Experience	7 years in payments and risk management
Goal	Reduce manual review queue and catch more fraud faster

Empathy Map

SAYS

- "We review thousands of transactions daily — we need automation"
- "False positives are killing customer satisfaction scores"
- "I need to explain every flag to management with evidence"
- "The current system misses too many CASH_OUT frauds"

THINKS

- Worries that fraudsters are always one step ahead of the rules
- Hopes ML can handle edge cases the rules miss
- Wonders if the model will be accepted by compliance teams
- Questions whether a probability score is enough for audit purposes

DOES

- Manually reviews flagged transactions every morning
- Runs SQL queries to identify suspicious patterns
- Escalates high-value suspicious transactions to senior management
- Files Suspicious Activity Reports (SARs) with regulators

FEELS

- Overwhelmed by the volume of transactions to review
- Frustrated when legitimate customers complain about blocked payments
- Anxious about missing a major fraud event that makes the news
- Hopeful that better tools will reduce the pressure on the team

Pain Points Summary

- Volume: Too many transactions to manually review — needs triage automation
- Accuracy: Current rules have high false-positive rate (~15%)
- Speed: Real-time decisions required but batch processing causes delays
- Explainability: Cannot always explain why a transaction was flagged

Design Implications for This Project

- The web interface must be simple enough for a non-ML user to operate
- The result page must show a probability score, not just a verdict
- The system must be fast (sub-second inference)
- Future work: Add SHAP-based feature importance to explain each prediction