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AI for Bharat Hackathon

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Team Name : Soul

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Problem Statement : Predict and prevent return abuse before losses occur without hurting genuine customers

Brief about the Idea:

- Uses AI to **predict return abuse risk** at order placement or return initiation
- Analyzes **customer behavior, SKU return patterns, and payment modes**
- Incorporates **Bharat-specific signals** such as COD orders, festivals, and sale events
- Generates an **explainable risk score** instead of binary blocking
- Applies **graduated actions** (instant refund, OTP verification, QC check)
- Reduces return losses while **protecting genuine customer experience**

What Problem Are We Solving?

Problem

- 10–40% of e-commerce returns are abusive or avoidable
- Existing systems:
  - Detect abuse **after losses occur**
  - Use **static rules** that hurt genuine users
- Returns increase logistics cost, inventory damage, and seller losses

Need:
A **proactive, explainable AI system** to manage return risk early.

How Is This Different From Existing Solutions?

Existing Approaches

- Rule-based blocking (return count, thresholds)
- Manual audits
- Post-return analysis

Our Approach

- Predictive risk scoring **before damage happens**
- ML + rule hybrid (adaptive, not static)
- Differentiates **customer abuse vs SKU vs seller issues**
- Bharat-aware signals (COD, festivals, regions)

Key difference: Existing systems react after loss. Our system predicts risk before damage.

How Does It Solve the Problem?

1. Analyze historical order & return data
2. Generate a **Return Abuse Risk Score (0–1)**
3. Explain *why* the risk exists
4. Apply appropriate action:
    - Instant refund (low risk)
    - OTP / QC verification (medium risk)
    - Refund after inspection (high risk)

✔ Reduced return losses

✔ Lower false positives

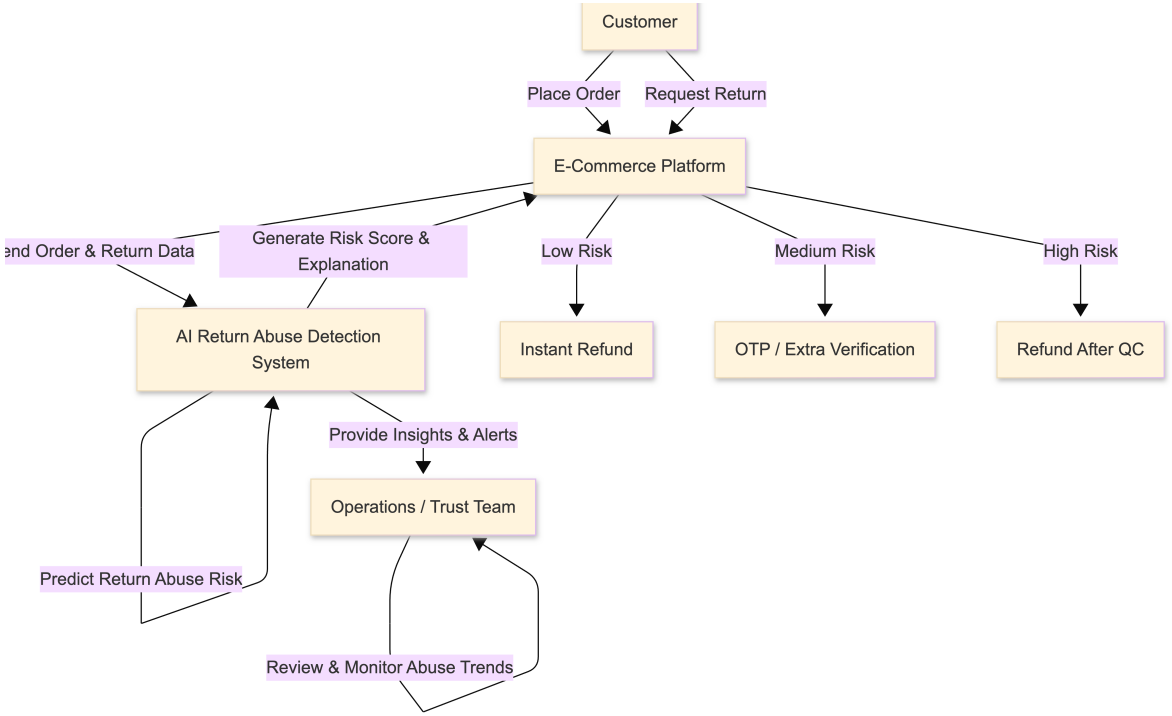
✔ Preserved customer trust

List of features offered by the solution

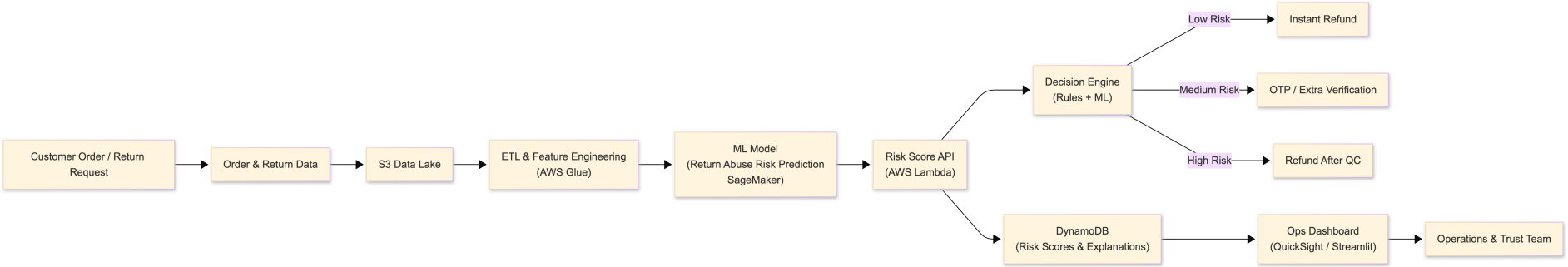
Key Features

- Intelligent return abuse risk scoring
- Customer, SKU, and seller behavior analysis
- Festival & sale abuse detection (Bharat-specific)
- Action recommendation engine
- Explainable ops dashboard
- Configurable risk thresholds

Process flow diagram or Use-case diagram



Architecture diagram of the proposed solution:



Technologies to be used in the solution:

- AWS S3 – Data storage
- AWS Glue – ETL
- AWS SageMaker – ML training & inference
- AWS Lambda – Real-time scoring
- DynamoDB – Risk scores
- QuickSight / Streamlit – Dashboard

Key difference: **Existing systems react after loss.** **Our system predicts risk before damage.**

We don’t block customers - we predict risk early and apply the lightest intervention needed.

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Thank You