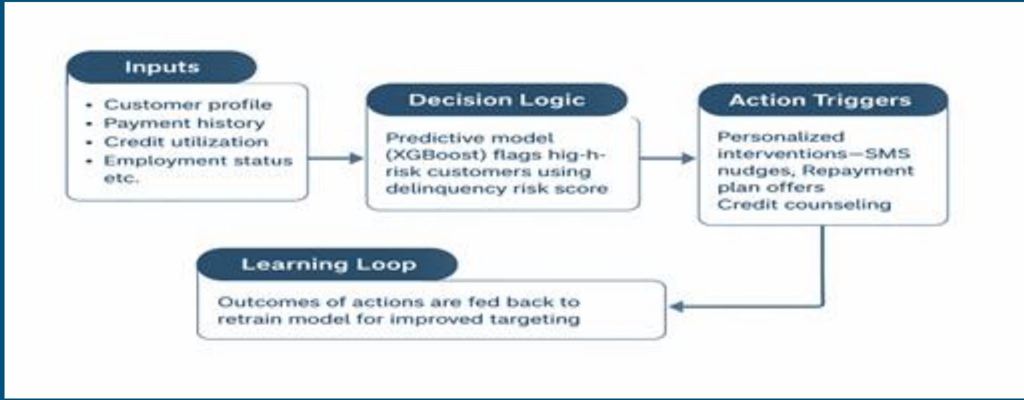
AI-Powered Collections Strategy

Leveraging Agentic AI for Scalable, Fair, and Effective Debt Management at Geldium

How the System Works

- **Inputs**: Customer demographics, payment history, credit utilization, employment status, etc.
- **Decision Logic**: Predictive model (XGBoost) flags high-risk customers using delinquency risk score.
- **Actions**: Personalized interventions—SMS nudges, repayment plan offers, credit counseling.
- **Learning**: Outcomes of actions are fed back to retrain model for improved targeting.



Role of Agentic AI

Autonomous (AI-Driven) Tasks

- Performs risk scoring and customer segmentation using the XGBoost model
- Automatically triggers SMS/email nudges based on individual risk levels
- Schedules repayment reminders or financial wellness tips
- Continuously learns from past outcomes to update model weights
- Sends dashboard alerts for emerging high-risk clusters

Human Oversight (Human-in-the-Loop) Tasks

- Reviews flagged edge cases or disputed accounts for deeper context
- Designs new escalation rules and policy updates based on market or legal changes
- Approves loan restructuring, settlements, or deferrals requiring judgment
- Intervenes in sensitive, high-value, or vulnerable customer cases
- Handles regulatory audits, escalated complaints, or reputational risk issues

Responsible AI Guardrails

- **Fairness Checks Across Demographics:** Regularly assess model performance across sensitive groups (e.g., by location or employment status) to ensure no unintentional bias or disparate impact.

- **Explainability and Transparency:** Use interpretable tools (e.g., SHAP values) to explain why customers were flagged for collections risk, ensuring decisions are understandable to stakeholders and regulators.

- **Human Oversight on High-Stakes Cases:** Keep humans in the loop for sensitive actions (like restructuring loans) to safeguard against rigid or harmful automation.

- **Regulatory Compliance with Key Frameworks:** Ensure compliance with key regulations like ECOA, GDPR, FCA, and FCRA to prevent bias, protect data rights, and promote fair treatment in collections decisions.

Business KPIs (Quantitative Outcomes)

- **Delinquency Rate Reduction:** Target a 10–15% decrease among high-risk segments through proactive outreach
- **Cost Efficiency:** Reduce manual collection effort and call center load by up to 25%
- **Operational Speed:** Real-time risk scoring and automated action triggers improve response time by 50%
- **Model Accuracy:** Maintain high F1-score (≥ 0.8) and balanced precision-recall across segments
- **Collection Cycle Time:** Shorten time from risk detection to repayment by automating early interventions

Customer Outcomes (Qualitative Results)

- **Improved Experience:** Personalized, timely nudges reduce stress and surprise escalations
- **Increased Fairness:** Bias checks and transparent AI decisions ensure equitable treatment across demographics
- **Scalable Support:** System scales to thousands of customers with tailored actions, maintaining personalization
- **Higher Engagement:** Relevant messages (e.g., budgeting tips or payment plans) improve response rates
- **Trust and Transparency:** Explainable models build confidence among customers and regulators