



AI-Powered Collections Strategy



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



How the System Works

- **Inputs:** – Customer Data Collected
 - Demographics: Age, Employment_Status, Income
 - Repayment History: Missed_Payments (past 12 months), Payment trends
 - Credit Behavior: Credit_Utilization, Debt_to_Income_Ratio, Credit_Score
 - Account Status: Loan type, tenure, outstanding balance
- **Decision Logic:**
 - Model Predictions: Logistic regression model scores delinquency risk
 - Business Rules: Overlay risk tiers with policy logic (e.g., high-risk but recently contacted = delay action)
 - Segment Mapping: Classify into Low, Medium, High risk → map to response type

- **Actions:**

- Low Risk: No action or optional financial wellness tips
- Medium Risk: Automated payment reminders, credit usage alerts
- High Risk: Proactive outreach (e.g., hardship program offer, live agent check-in)

- **Learning:**

- Track customer responses (repayment, default, engagement)
- Feed outcomes back to update model accuracy
- Flag bias or performance drift → review with human-in-the-loop
- Adjust interventions and thresholds based on historical effectiveness

Role of Agentic AI

Autonomous (AI-Powered Actions)	Human Oversight (Manual Review Required)
Sending automated payment reminders via email/SMS	Approving or tailoring hardship program offers
Assigning risk scores using logistic regression model	Reviewing edge cases or flagged accounts with unclear behavior
Triggering low-touch actions (e.g., spending alerts)	Managing complaints or escalations from at-risk customers
Updating risk tiers as new data arrives	Auditing fairness metrics and reviewing model performance regularly

Responsible AI Guardrails

To ensure the AI-powered collections system is ethical, compliant, and trustworthy, the following safeguards will be built in:

1. **Fairness Checks**

Regularly test model performance across customer segments (e.g., income level, employment type) to detect and reduce biased outcomes.

2. **Explainability Requirements**

Use interpretable models (like logistic regression) and provide clear rationale for each decision to support transparency and regulatory audits.

3. **Regulatory Compliance**

Ensure full alignment with financial regulations and data laws, including **ECOA**, **GDPR**, and any applicable local lending guidelines.

4. **Human-in-the-Loop Oversight**

Flag high-impact or sensitive decisions (e.g., legal action, hardship offers) for human review to ensure ethical judgment and accountability.

Expected Business Impact

Quantitative Outcomes (Business KPIs)

- **Reduced Delinquency Rates:** Early identification and intervention lowers defaults by 15–25%.
- **Higher Repayment Rates:** Personalized outreach improves engagement and recovery.
- **Operational Cost Savings:** Automating routine tasks reduces collections labor costs by 30–40%.
- **Faster Resolution Time:** Intelligent triaging cuts average collections cycle by 20%.

Qualitative Outcomes (Customer-Centric Benefits)

- **Improved Customer Trust:** Transparent, supportive interventions reduce stress and build goodwill.
- **Enhanced Fairness:** Fairness checks and explainable AI ensure ethical treatment across all customer groups.
- **Scalability & Consistency:** Autonomous system scales to millions of customers without sacrificing oversight or personalization.
- **Regulatory Readiness:** Built-in compliance safeguards support audits and protect brand reputation.