

# Capstone: AI-Powered Attrition Classifier

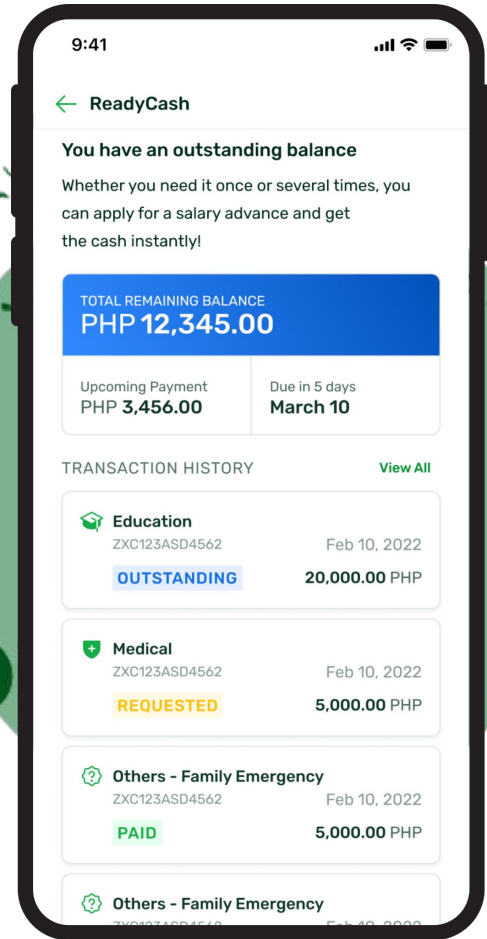
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**AIM Postgraduate Degree in AI/ML**

## Overview

# ReadyCash

**Salary Advance** solution providing your employees to **access emergency funds** when they need it most

- 1 **Immediate access to cash**, no delays or waiting periods between applications.
- 2 **Multiple applications** allowed within your existing credit limit, enabling flexibility
- 3 **Automatic payroll deductions** for sustainable and hassle-free repayments.



# NPL Benchmarks across financial sectors



## BSP-regulated bank Consumer Loans

Philippine banks' consumer loan NPL ratio was 5.38% as of September 2025.



## Digital banks (early-stage volatility)

Digital banks saw NPLs spike as high as ~25% during early portfolio build-out, driven by small loan books and rapid experimentation, before improving to ~7.5% as controls and scale matured.



## Online lending platform benchmark

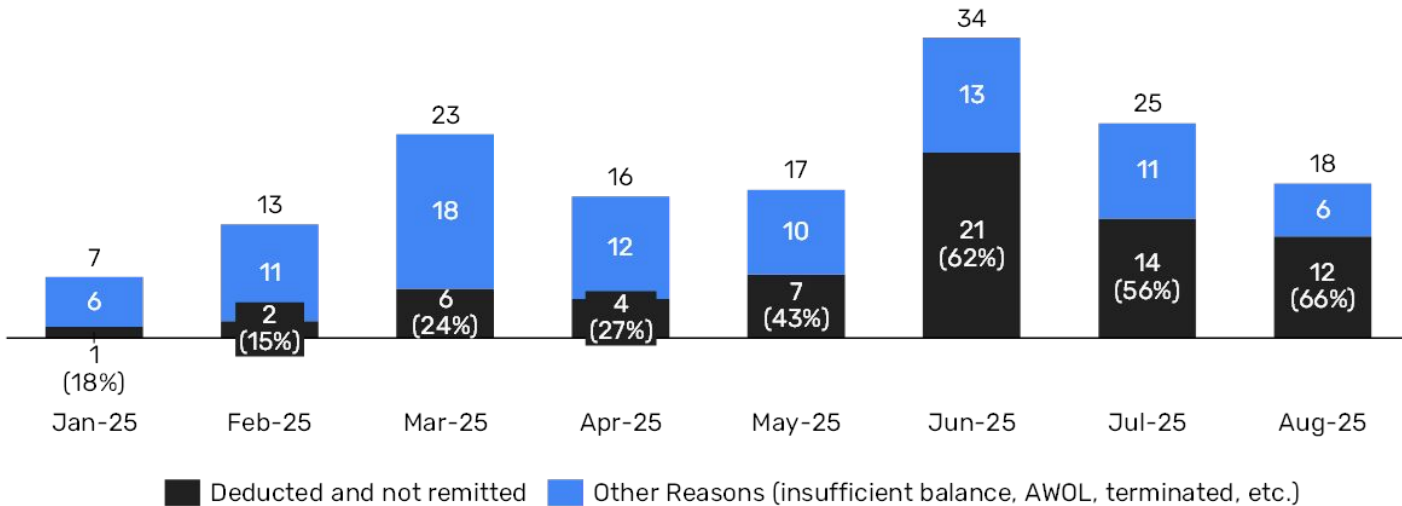
BillEase reported an overall NPL ratio around 7–8% (June 2024). Home Credit reported its NPL ratio “remains below 10%.”



## Sprout's target is bank-comparable risk 2026

Our goal is to converge toward a ~4% LTD / NPL ratio, consistent with traditional banks' consumer portfolios and well below unsecured digital benchmarks.

**Problem: Non-Performing Loans have risen to >6% (goal is < 4%). 56% of NPLs are attrition-related while the rest are due to operational issues (which can still be collected)**



### How this happens

**1) Employee uses ReadyCash**

**2) Employee resigns unexpectedly**

**3) Final pay is insufficient to cover loan payment**

**4) Loan becomes non-performing**

# Solution: AI-powered attrition classifier

## MACHINE LEARNING MODEL

Predicts which employees are likely to resign **before** they apply for a loan

Model Accuracy

**99.3%**

Detection Rate

**93%**

## Key Risk Indicators

Job tenure and experience patterns

Employee age and career stage

Satisfaction survey responses

Compensation competitiveness

Promotion and growth trajectory

**Solution: The classifier was trained using a freely-available dataset. This is still a POC but we can reused the methodology our ReadyCash and employee data**

## IBM HR Analytics Employee Attrition & Performance

Data Card Code (1229)

WA\_Fn-UseC\_-HR-E

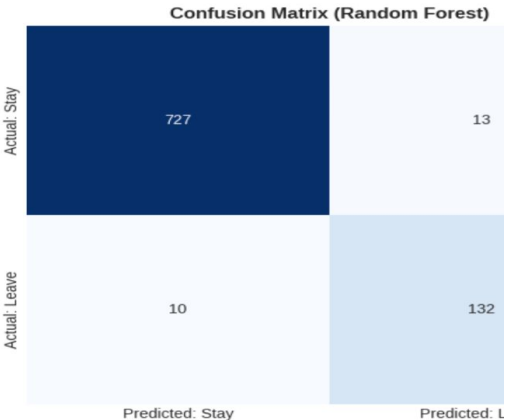
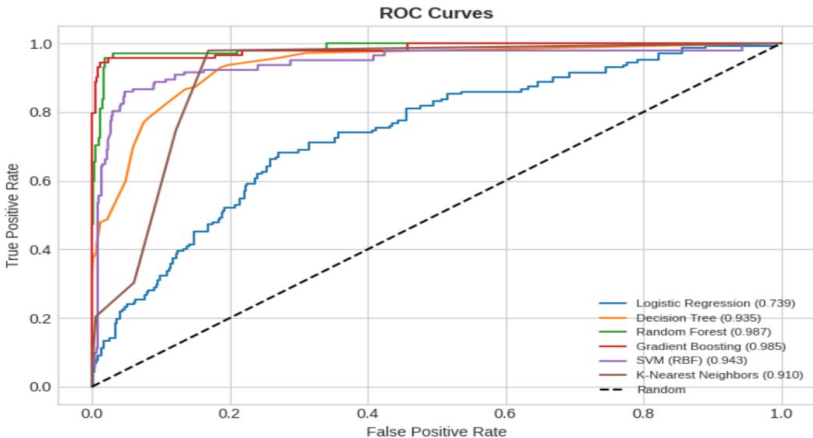
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# Age  
Numérica - Discreta



	Model	Accuracy	Precision	Recall	F1-Score	AUC-ROC
2	Random Forest	0.973923	0.910345	0.929577	0.919861	0.986506
3	Gradient Boosting	0.959184	1.000000	0.746479	0.854839	0.984812
4	SVM (RBF)	0.903628	0.646154	0.887324	0.747774	0.942601
1	Decision Tree	0.865079	0.551570	0.866197	0.673973	0.935473
5	K-Nearest Neighbors	0.836735	0.488636	0.302817	0.373913	0.909759
0	Logistic Regression	0.717687	0.322259	0.683099	0.437923	0.738942

BEST MODEL: Random Forest (AUC = 0.9865)



**Solution: The classifier will be run during loan application. The available total loanable amount will then be adjusted based on the results.**

**LOW RISK**

82% of employees

**50%**

of net pay

Up to: P50,000

**MEDIUM RISK**

4% of employees

**35%**

of net pay

Up to: P35,000

**HIGH RISK**

14% of employees

**0%**

of net pay

**\*\*\*employee classification percentages are based on the open-source dataset used to train the model. We will have to repeat and slightly modify the training of the model using our actual data before we can test.**

**Solution: The classifier will be run during loan application. The available total loanable amount will then be adjusted based on the results.**

Current NPL

Target NPL

**7%** → **2.5-4.5%**

**40-70%**

reduction in attrition-related NPL

#### ADDITIONAL BENEFITS

Proactive risk management for existing loans

Early warning alerts for high-risk borrowers

Data-driven underwriting decisions

Reduced manual review workload

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### **PHASE 1**

#### **Pilot**

Month 1-2

Retrieve actual data from lakehouse

Rerun training pipeline using new data

Develop model serving API

Integrate API to RC new loan flow

Early access to one high-risk client

### **PHASE 2**

#### **Refinement**

Month 3-4

Adjust thresholds based on data

Expand to all high-risk clients

### **PHASE 3**

#### **Full Deployment**

Month 5+

Deploy to all RC clients

Monthly risk re-scoring

Quarterly model retraining

## Summary

AI model predicts employee attrition with 99% accuracy

Risk-based loan limits protect against high-risk borrowers

Expected **40-70% reduction** in attrition-related NPL

Target NPL rate: 2.5-4.5% (below 3% threshold)