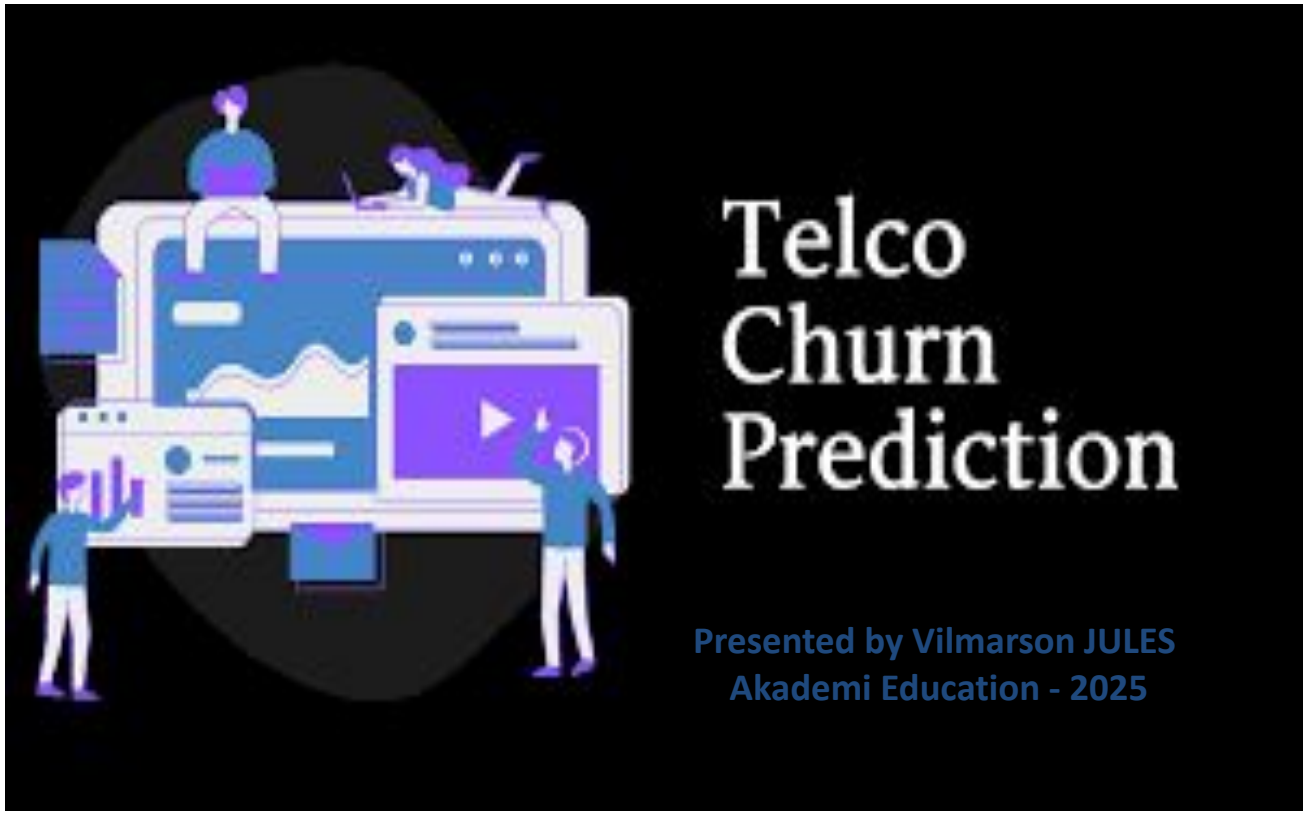

Telco
Churn
Prediction
Presented by Vilmarson JULES
Akademi Education - 2025

# Telecom-Churn Prediction

## A Machine Learning Study to Identify Customers at Risk of Leaving

# Outline

I. **Beginning**
   - Overview
   - Business Understanding

II. **Middle**
   - Model Performance & Results

III. **End**
   - Recommendations
   - Next Steps

# Overview

## Description

- This project focuses on predicting customer churn for a telecom company, DIGICEL Haiti for example.
- The goal is to build a machine learning classification model that identifies customers at high risk of leaving the company's services.

# Overview

## Goals

- Identifies customers at high risk of leaving
- Identify and Predicting churn-prone  customers
- Uncover patterns that indicate churn
- Provide **data-driven recommendations** for strategic decision-making.

# Business Understanding

## Business Problem :

A company is losing a significant number of customers.

1. High customer churn bring about  lost revenue & higher acquisition costs.
2. No reliable way to identify at-risk customers proactively.

# Data Understanding

**Data Sources :**

Kaggle - Churn in Telecoms Dataset

**Data format :** CSV

**Records :** 3 333

# Data Understanding

## Methods

- **Data Preprocessing:** Clean and prepare Data for modeling  Build the Baseline Decision Tree to predict churn
- **Model Building:** Explore multiple models and select the best performer
- **Model Evaluation :** Measure performance using key metrics
- **Recommendations:** Translate findings into actionable strategies for the company

# Data Understanding

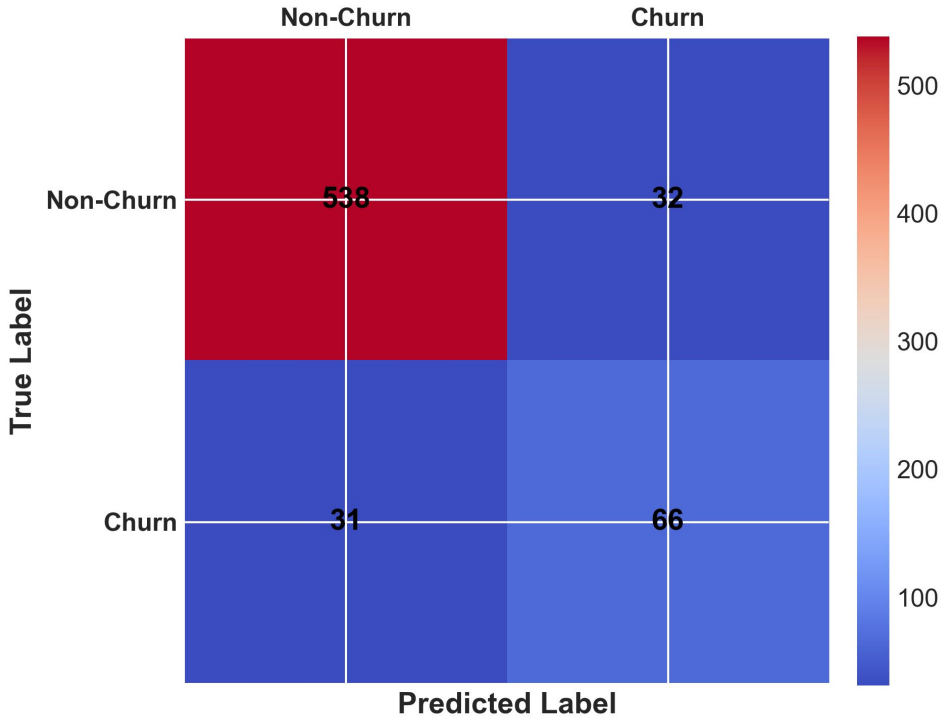
## Key Variables :

- **Movie Attributes :** Age, Gender, Service Plan
- **Financial Metrics :** Total Charges, Payment Method
- **Usage Metrics :** Call Minutes, Data Usage, SMS
- **Churn Indicator :** Whether the customer left the service

# Model Performance & Results

## Confusion Matrix

- **Loyal Customers:** 538 correctly identified → saves retention costs At-Risk Customers:
- **At-Risk Customers:**66 flagged → proactive actions can prevent churn



# Model Performance & Results

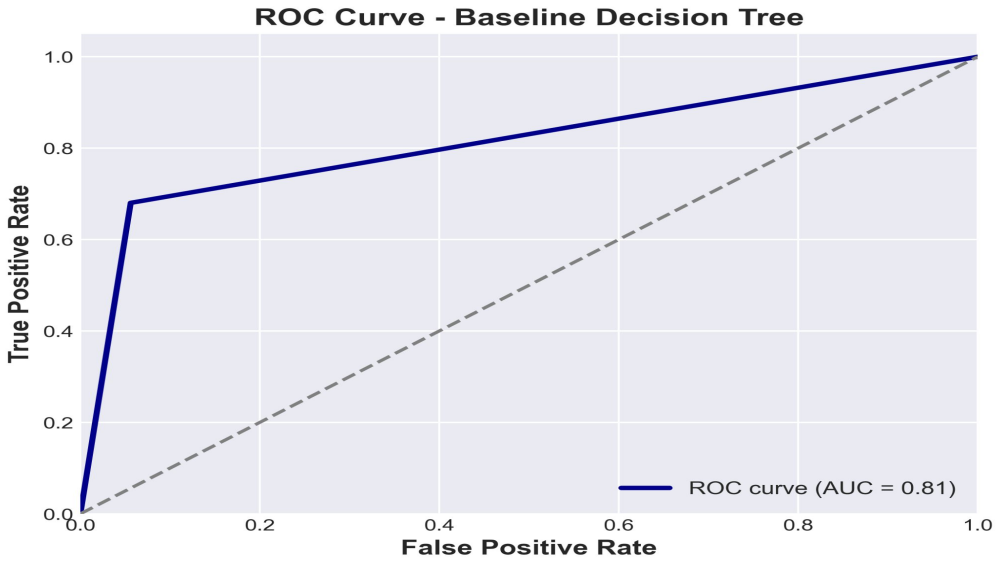
## Key metrics

- Correctly predicts **91% of customers**
- Accurately identifies **most loyal clients**
- Captures **68% of churners** for retention focus
- Balance ensures **revenue protection with limited extra costs**

# Model Performance & Results

## ROC Curve

- Distinguishes churners from loyal customers with **81% accuracy**
- It shows performance **well above random chance**
- Helps **focus retention on at-risk customers**



# Recommendations

1. **Proactive Retention Programs :**

   Target high-risk customers with offers and loyalty programs

2. **Prioritize High-Value Customers :**

   Combine churn risk with CLV to focus on most valuable clients

3. **Enhance Service & Marketing Strategies :**

   Use model insights to improve products & campaigns

4. **Monitor & Update Models :**

   Integrate model in operations and retrain with new data.

# Next Steps

- **Continuously monitor churn patterns:**
  Track revenue, profit, and audience engagement continuously.
- **Refine predictive models ::**
  Retrain with new data to improve accuracy and recall.
- **Leverage Partnerships :**
  Personalize offers and outreach for at-risk customers.
- **Implement targeted retention strategies :**
  Measure churn reduction, revenue gains, and ROI.
- **Integrate into CRM systems :**
  Embed churn scores to guide real-time sales and support actions.

# END !

- Questions?

# END !

## *Thank you for your attention!*

**Feel free to reach out!**

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