



SCORE CARD MODEL HOME CREDIT INDONESIA

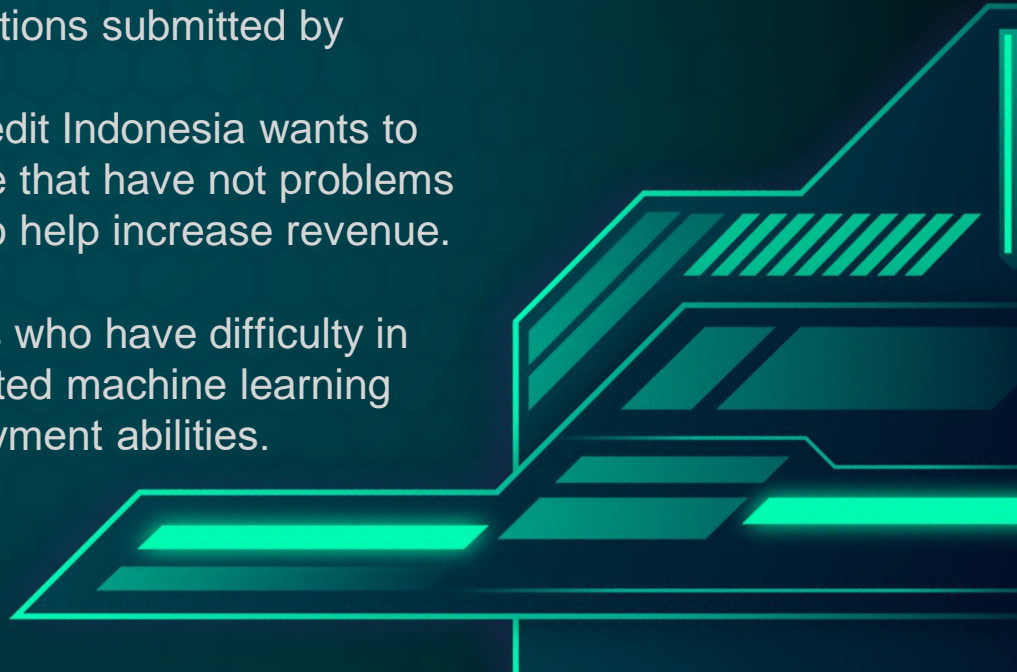
Wardiansyah Fauzi Abdillah



PROBLEM RESEARCH

PROBLEMS AND OBJECTIVES

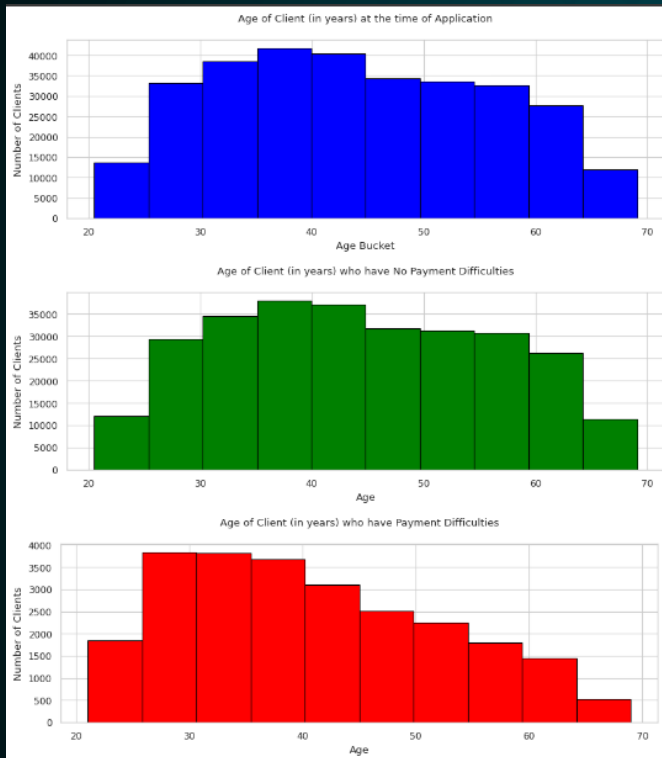
- Problems
 1. Home Credit Indonesia aims to develop a machine learning system that can assist its team in evaluating possible credit repayment issues for loan applications submitted by customers.
 2. From the existing data, Home Credit Indonesia wants to find out what customer criteria are that have not problems in the credit repayment process to help increase revenue.
- Objectives
- Identified characteristics of clients who have difficulty in repaying the loans and Implemented machine learning algorithms to predict client's repayment abilities.



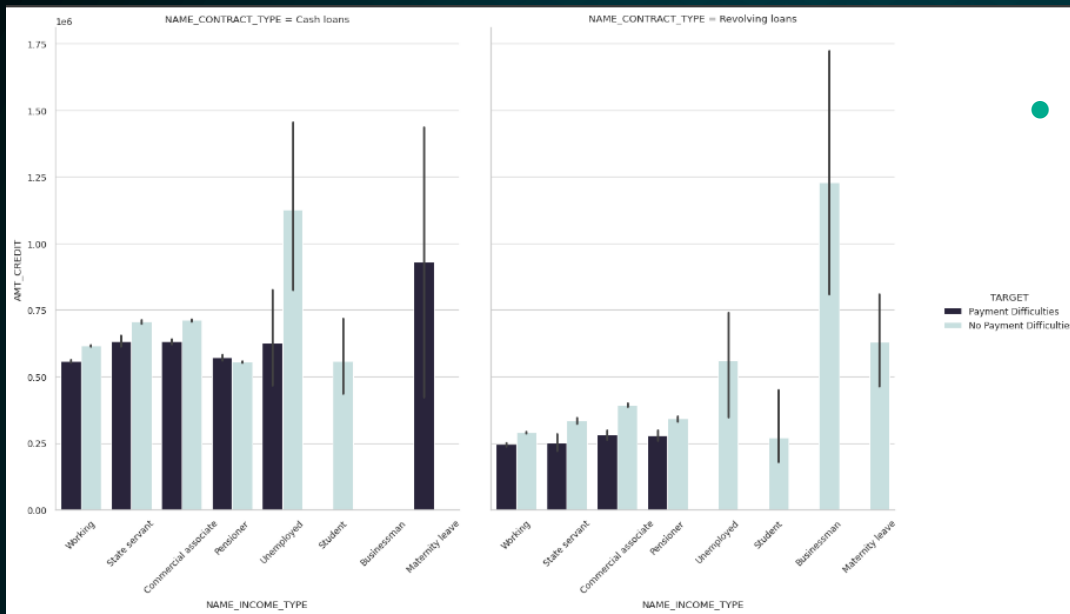


BUSINESS INSIGHT

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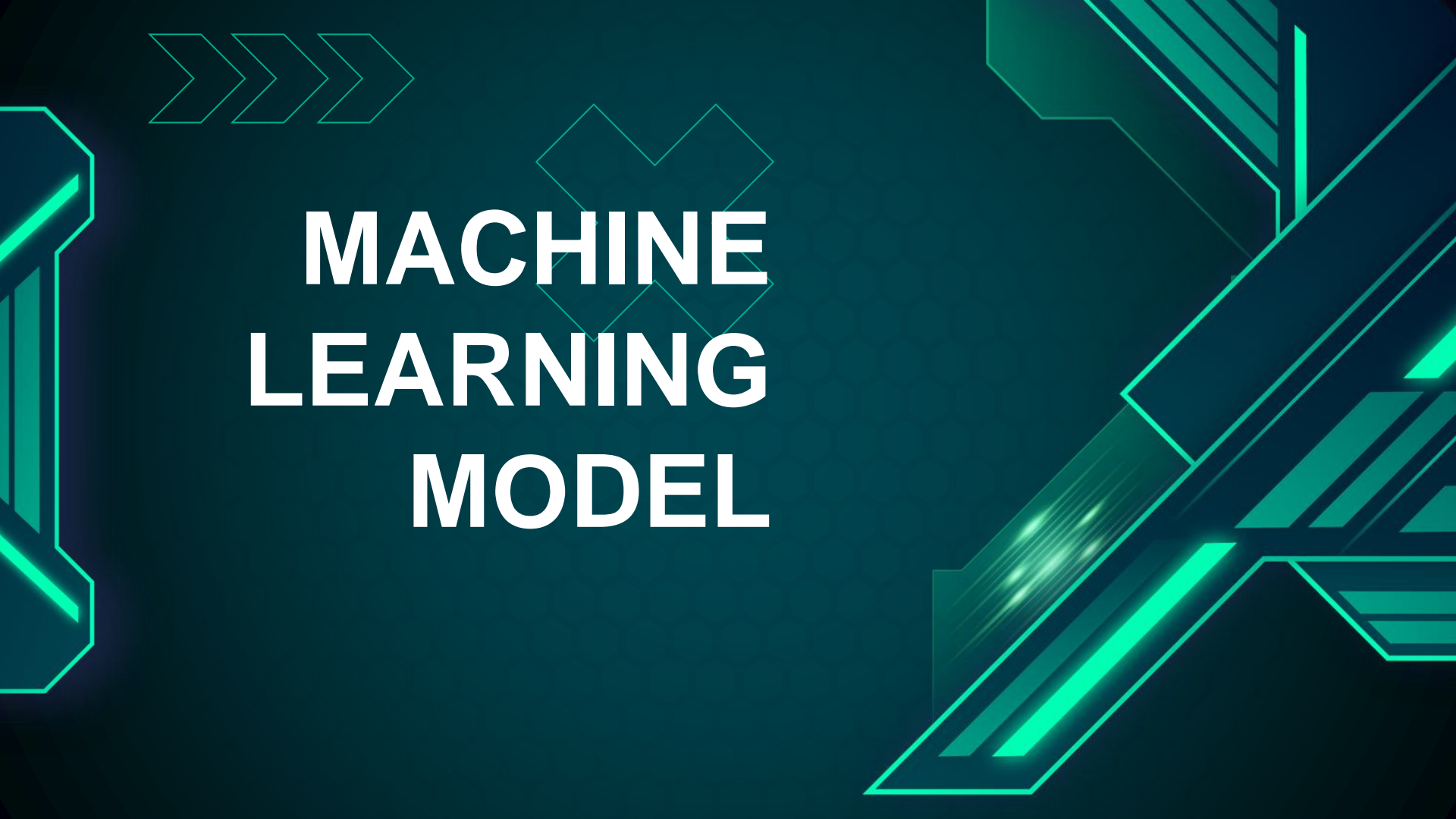


- Clients who do not face payment difficulties predominantly belong to the 35-45 year age range. On the other hand, clients who experience payment difficulties are primarily within the 25-35 year age range.



● Clients on maternity leave with cash loans face difficulties in repaying loans for a moderate credit amount, while clients with maternity leave and revolving loans have no repayment issues.

- Unemployed clients with cash loans encounter problems in repaying loans for medium credit amounts, with more than 50% of them affected. However, unemployed clients with revolving loans experience no difficulties in repayment.
- All student clients demonstrate no repayment difficulties, whether they have cash loans or revolving loans, for low to medium credit amounts.

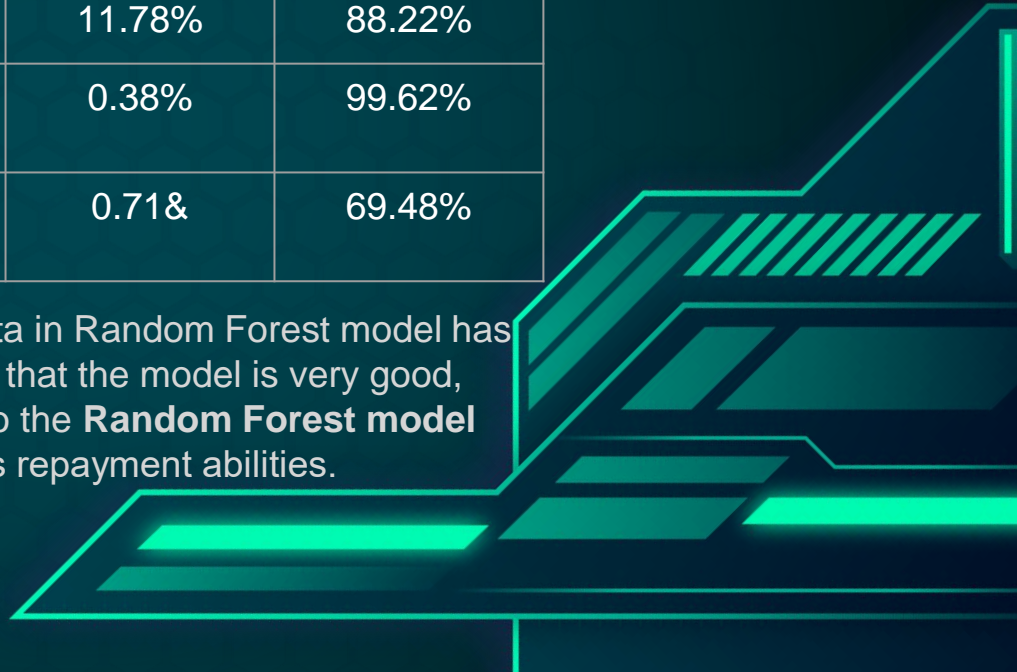
The background features a dark teal color with various geometric shapes in a lighter teal shade. In the top left, there are three chevron-like shapes pointing right. In the center, there is a diamond shape with internal lines. On the left side, there is a vertical rectangular shape with a glowing teal line. On the right side, there are several overlapping rectangular and trapezoidal shapes, some with glowing teal lines, creating a sense of depth and movement.

MACHINE LEARNING MODEL

Model Comparison

Algorithm	Training Accuracy Score	Testing Accuracy Score	Error Margin	ROC Score
Logistic Regression	67.61%	67.29%	0.13%	67.29%
Decision Tree	100%	88.22%	11.78%	88.22%
Random Forest	100%	99.62%	0.38%	99.62%
Neural Network	70%	69.48%	0.71%	69.48%

The prediction accuracy of the train and test data in Random Forest model has a value that is not much different, it can be said that the model is very good, which is there is no underfitting or overfitting. So the **Random Forest model** was chosen as the best model to predict client's repayment abilities.



BUSINESS RECOMENDATION

- Develop a marketing campaign to attract a higher number of students, accountants, high-skilled tech staff, and managers to apply for loans.
- Additional analysis is required, including surveys, to investigate potential issues when clients on maternity leave or unemployed opt for cash loan contracts. This information will enable future recommendations of the appropriate contract type to increase their chances of loan approval.
- Prioritize clients within the 35-45 year age range, as they demonstrate a lower incidence of payment difficulties.

You can see my full documentation here!

<https://github.com/WardiansyahF/HCI-Score-Card-Model>

