

Project Proposal: Predict Credit Card Customer Churn

A. Problem Identification

Problem Statement: *Predict likelihood that an existing customer will churn.*

Context: *A manager at the bank is disturbed with more and more customers leaving their credit card services. They are looking for support predicting who will churn so they can proactively go to the customer to provide them better services and turn customers' decisions in the opposite direction.*

Criteria for success: *10% reduction during the next year in the percentage of customers that have churned.*

Scope of solution space: *Machine learning model to predict likelihood of customer churn.*

Constraints: *Available dataset is limited to 10,000 customers with 18 features. Only a small percentage have churned ~16%.*

Stakeholders: *Bank manager.*

Data source:

<https://www.kaggle.com/datasets/sakshigoyal7/credit-card-customers>

B. Use Case

Identify population of customers likely to churn for targeted outreach to maintain customer relationship.

C. Approach

1. Import data.
2. Exploratory data analysis to understand datasets. (Review for missing values and distributions of key features).
3. Determine if any additional features should be developed from dataset.
4. Bootstrap datasets to maximize training data.
5. Test variations of machine learning model using cross validation..
6. Assess performance.
7. Train model with all available data.

D. Deliverables

1. GitHub repo containing all work done to complete the project
2. Slide deck summary

3. Project report

E. Baseline (POC)

Initial focus will be to develop a supervised machine learning model that predicts likelihood that an existing customer will churn.

F. Future Improvements

1. Consider time, predicting how long before the customer is likely to churn.
2. Consider impact of specific services that are offered to the customer.