

# Inspiration

- 1. Adverse consequences of late loan payments
  - <u>Loan Borrowers</u>: higher penalty fees, lower credit scores
  - Loan Lenders: fraud risk, default risk
- 2. Give prediction of whether a loan borrower with certain attributes faces loan delinquency risks

## **Motivation**

- 1. *Promot*e a financially healthier loan market
- 2. *Provide guidance to* loan borrowers and loan lenders



# **DEMO**



http://loana-publi-d0j8epx8xjk5-976363701.us-e ast-1.elb.amazonaws.com/

# **DATA**





#### **Data Size**

**307511** Samples of Loan Applications



## **Demographic Features**

Age, Income, Family Status,
Education Level, Gender, etc.



### **Loan Features**

Annuity Amount, Credit Amount, Price of the Good for which the Loan was Given, etc.



## **Target Response**

- 1: Client with at least ONE late payment
- **o:** Client with NO late payments

## **MODEL & SUCCESS CRITERIA**

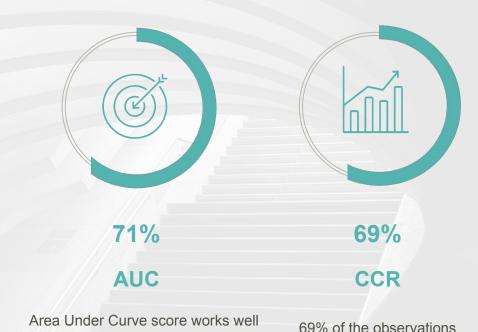
#### **Random Forest Classifier**

#### Features:

Demographic & Loan Features

#### **Predict**:

- Probability of Loan Delinquency
- ❖ Class (1 or 0) → Recommendation



with imbalanced dataset

AUC > 70% → good performance

were correctly classified

## **INSIGHTS**

MODEL DATA Contract Type • Cash Loans are 9 times more popular than Important Features **Revolving Loans** in the dataset 1. *Age* 2. Number of years in *current employment* Gender • Nearly <sup>2</sup>/<sub>3</sub> of the applicants are *female* in the dataset





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