Credit Card Approval Prediction

Credit card approval prediction is an important business problem for financial institutions, such as banks and credit card companies, because it helps them make informed decisions about whether or not to approve credit card applications from potential customers. The ability to accurately predict credit card approvals can help financial institutions reduce their risk of losses due to defaulting customers, and increase their profitability by identifying creditworthy customers who are likely to repay their debts.

Why prediction for Approval of Credit Card is important?

If credit card approval prediction is not identified correctly, it can have serious consequences for both financial institutions and customers. For financial institutions, incorrect predictions can lead to increased credit risk and losses due to defaults. These losses can be significant and can affect the financial health of the institution. In addition, incorrect predictions can lead to missed opportunities to approve creditworthy customers, which can result in a loss of revenue and market share.

For customers, incorrect predictions can result in denied credit card applications, which can negatively impact their credit score and future creditworthiness. In addition, customers may feel that they have been unfairly denied credit, which can damage their relationship with the financial institution and lead to lost business.

Overall, accurate credit card approval prediction is crucial for financial institutions to manage their risk and maintain profitability, and for customers to have access to the credit they need to achieve their financial goals.

Objective:

This project is aimed to predict whether the applicant or customer can be approved for a credit card or not based on personal details such as profession, age, accounts, number of children, etc.

Business Problem: Utilizing machine learning approaches to predict credit card approval based on customer information.

Credit score cards are a common risk control method in the financial industry. It uses personal information and data submitted by credit card applicants to predict the probability of future defaults and credit card borrowings. The bank is able to decide whether to issue a credit card to the applicant. Credit scores can objectively quantify the magnitude of risk.

Generally speaking, credit score cards are based on historical data. Once encountering large economic fluctuations. Past models may lose their original predictive power. Logistic model is a common method for credit scoring. Because Logistic is suitable for binary classification tasks and can calculate the coefficients of each feature. In order to facilitate understanding and operation, the score card will multiply the logistic regression coefficient by a certain value (such as 100) and round it.

At present, with the development of machine learning algorithms. More predictive methods such as Boosting, Random Forest, and Support Vector Machines have been introduced into credit card scoring. However, these methods often do not have good transparency. It may be difficult to provide customers and regulators with a reason for rejection or acceptance.

Advantages:

1. Faster Processing: An ML model can quickly analyze a large number of credit applications and make accurate predictions about whether an applicant is likely to be approved or not. This can help banks and financial institutions save time and resources in the credit approval process.

2. Improved Accuracy: ML models can analyze large amounts of data and identify patterns that may not be immediately apparent to human analysts. This can result in more accurate credit decisions and reduced risk of defaults or fraud.

3. Minimizes Risk: Credit card companies need to assess the creditworthiness of an applicant to determine the likelihood of them repaying the debt. Predictive models enable companies to minimize the risk of defaults and manage their financial exposure.

4. Increased Efficiency: Credit card companies receive a high volume of applications. Predictive models can help to automate the approval process, reducing the workload on staff and improving the efficiency of the application process.

5. Enhances Customer Experience: Predictive models can enable companies to provide faster decisions and better customer experience. Customers expect quick and easy access to credit. Delays in processing applications can lead to a poor experience and result in the customer moving to another provider. By providing faster and more accurate credit decisions, ML models can improve the overall customer experience for credit applicants. This can lead to increased customer satisfaction and loyalty.

6. Reduces Bias: The use of predictive models in credit approval decisions can reduce the risk of bias, leading to fairer and more accurate decisions. This is especially important as manual review processes can be prone to subjectivity and bias.

7. Increases Profitability: By making more accurate decisions about who to extend credit to, credit card companies can reduce losses from defaults and write-offs. This can improve profitability and reduce the cost of funds.