**Abstract**

*Effective Credit Risk Analysis before approving credits are essential for all financial institutions. So, it is vital to interpret all of the available data on the credit history of customers and use it to derive insights on the customer characteristics and also to fuel Machine Learning applications which can instantly predict the credit risk for a customer and approve or deny credit applications. Here we are modeling a Machine Learning Algorithm after effective analysis to help the financial institutions to perform the credit review and perform credit analysis.*

*We used Random Forest Classifier for predictive analysis and applied clustering analysis on customers having a good credit score to derive insights and evaluate customer characteristics that can help to formulate new business objectives. We identified distinct groups of customers and concentrated on the characteristics of Very high credit customers and Low credit customers. On analysis, we found that customers having very high and low credit amount approvals are Foreign Workers rather than native workers. Customers got approved with higher credit amounts use credit mostly to buy cars and lower credits for buying television/radio. Most of the customers who got credit approval doesn’t have a checking account with the bank. Customers with an occupation, skilled worker and age 25-35 are more likely to be creditable. So, providing low-interest rates and necessary methodologies and strategies to target this group can improve the profit of the bank.*