

# Machine Learning Project Proposal

**Project Title:** Credit Card Fraud Detection using Machine Learning Algorithm.

## Project Idea:

Financial fraud is an ever growing menace with far consequences in the financial industry. Data mining had played an imperative role in the detection of credit card fraud in online transactions. Credit card fraud detection, which is a data mining problem, becomes challenging due to two major reasons - first, the profiles of normal and fraudulent behaviours change constantly and secondly, credit card fraud data sets are highly skewed. The performance of fraud detection in credit card transactions is greatly affected by the sampling approach on dataset, selection of variables and detection technique(s) used.

The Credit Card Fraud Detection Problem includes modelling past credit card transactions with the knowledge of the ones that turned out to be fraud. This model is then used to identify whether a new transaction is fraudulent or not. Our aim here is to detect 100% of the fraudulent transactions while minimizing the incorrect fraud classifications. We will be using a local outlier factor from sklearn package to calculate anomaly scores and Isolation forest algorithm.

**Data Set Link:** <https://www.kaggle.com/mlg-ulb/creditcardfraud> (Source: Kaggle)

**Software's Used:** Jupyter Notebook, Python, Pandas, numpy, seaborn, scipy and other libraries.

## Literature Work:

1. Credit Card Fraud Detection using machine learning models and collating machine models, Navanshu Khare and Saad Yunus Sait, International Journal of pure and Applied Mathematics, Volume 118 No.20 2018, 825-838.
2. Credit Card Fraud Detection using Machine Learning Techniques: A Comparative Analysis. John O. Awoyemi, Adebayo O. Adetunmbi, Samuel A. Oluwadare, ICCNI 29-31 Oct 2017.
3. Detecting Credit Card Fraud by ANN and Logistic Regression. Yusuf Sahin, Ekrem Duman, IEEE 28 February 2014.

**Work Division among Teammates:**

- Sai Chaitanya Kathiri: Research on the problem statement, Finding Suitable Algorithm for problem statement and Coding in Python.
- Mano Vishnu A: Find Suitable Algorithms for problem statement, Implementation of Algorithms and Coding in Python.