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## 1. Introduction

In this report, our focus is on identifying one of the common financial areas in which Machine Learning application is extensively used. There are several areas in which Machine Learning applications can be used in finance such as analysis of financial firm, comparison of two or more financial firms and industries. But the area that we are going to discuss here is fraud detection in financial industries and with the help of Machine Learning applications.

## 2. Fraud Detection in Machine Learning

Many financial industries these days are facing the issues relevant to fraud detection. This issue is generally linked with the credit cards. Many financial industries are losing thousands of dollars daily because of the fraudulent activities of individuals relevant to credit cards. Generally, there are several Machine Learning techniques that have been used by financial industries these days to keep track of fraudulent activities. (Yufeng Kou, 2004) There is one model available of Machine Learning which train the model on the test dataset that is available online. This model helps to find and recognize fraudulent patterns in the dataset. As a result, the model is then easily used to predict fraudulent behaviors and then experts in the financial industries can handle the situation according to some rules and policies.

## 3. Advantages and Disadvantages

In this section, we are going to briefly discuss about some of the advantages and disadvantages of the approach that we have mentioned in previous section.

### 3.1. Advantages

- Through this approach, the frauds, anomalies, and fraudulent activities and patterns can easily be discovered. Along with this, it also provides higher accuracy.
- With the help of this approach, many financial industries are shifting their attentions towards machine learning solutions.
- This approach also helps to lower the fraud detection cost because it reduces the chargeback and manual rates of revenue.
- It also helps the financial industries to provide customizable outcomes.

### 3.2. Disadvantages

- Even though this approach provides efficient results, but the cost to manage this model is very heavy.
- Financial industries should have high levels of experts that will be able to understand and implement the model to detect the fraudulent activities.
- One major con or disadvantage of using this approach is that the data that is to be collected for analysis is very limited.

Financial industries should allow enough budget, so that this model can be implemented in the industries which will help them to save thousands of dollars. There is also a need for financial industries to higher Machine Learning engineers and experts, which will help to overcome the

fraud cases. Optimization of the model should also be kept in mind because model might show good accuracy but maybe in reality the model is not doing well to detect fraudulent cases.

#### 4. Conclusion

In this report, we have seen and discussed briefly about the one application of Machine Learning in the field of finance. The application of Machine Learning that we have discussed is Fraud Detection. We have seen one approach that most financial industries are using these days which helps to overcome the fraudulent cases. We have also discussed about some advantages and disadvantages of the approach that we have mentioned. This report can be easily used to conduct extensive research in field of finance and Machine Learning.

## References

Yufeng Kou, C.-T. L. S. S. a. Y.-P. H., 2004. Survey of fraud detection techniques. *IEEE International Conference on Networking, Sensing and Control*, Volume II, pp. 749-754.