

# Anomaly detection in Payments

**IE 406 : Machine Learning**

**Group no. : 18**

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## Motivation

As time passes, Human leads to more and more Digital methods. It is true in payment methods too. People are adopting digital payment methods. Digital Transactions in India increased to 3,133.58 crore in 2018-19, registering a growth of 51 per cent over the previous year, said the government in Parliament [\[1\]](#). With increase in digital methods, frauds are also increasing. According to Minister of State for Finance Anurag Thakur, With regard to ATM / Debit card, Credit card and Internet banking transactions of over Rs 1 lakh, there were 1,477 frauds in FY 2018-19. According to Financial Express [\[2\]](#), Digital payments frauds make up for a significant portion – up to half – of all bank fraud cases. So, we need a system which can detect this Fraud or anomaly in payment.

## Methodology

During our research for project topic, we saw there are several ML and non-ML based approaches which can be applied. The goal of our project is to build a system which can classify transactions in one of the categories - fraud transactions from non-fraud transactions. We can apply classification approaches like Logistic regression and SVM (Support vector machine). As stated above, there are other approaches and we would like to know and try them if possible.

## Data set/ Experiments

We want to use Kaggle provided dataset [3] of simulated mobile based payment transactions. As we go along with our project, if we get another dataset which more optimal then we would change if possible. We are going to compare the approaches which would be done by us and check which one is optimal.

## References

1. [https://www.business-standard.com/article/economy-policy/digital-transaction-volumes-up-51-in-2018-19-to-rs-3-133-5-crore-govt-119071801697\\_1.html](https://www.business-standard.com/article/economy-policy/digital-transaction-volumes-up-51-in-2018-19-to-rs-3-133-5-crore-govt-119071801697_1.html)
2. <https://www.financialexpress.com/industry/banking-finance/thousands-of-digital-payment-frauds-putting-modis-digital-india-dream-at-risk/1641910/>
3. <https://www.kaggle.com/ntnu-testimon/paysim1>