# Fraud detection – Detect, Control and Eliminate

Fraud is a billion-dollar business and it is increasing every year. Fraud is an adaptive crime, so it needs special methods of intelligent data analysis to detect and prevent it.

Traditional methods of data analysis have long been used to detect fraud. Fraud management is a knowledge-intensive activity.

Fraud that involves cell phones, insurance claims, tax return claims, credit card transactions etc. represent significant problems for governments and businesses, but yet detecting and preventing fraud is not a simple task.

They require complex and time-consuming investigations that deal with different domains like financial, economics and law.

Techniques used for fraud detection fall into two primary classes:

- Statistical Techniques
- Artificial Intelligence

Below methods offer applicable and successful solutions in different areas of fraud crimes:

- Knowledge Discovery in Databases (KDD)
- Data Mining
- Machine Learning and
- Statistics

Some of the Statistical methods used are:

- Data pre-processing techniques for detection, validation, error correction, and filling up of missing or incorrect data using Median or Mode.
- Calculation of various statistical parameters such as Mean, Quartiles, Performance Metrics, Probability Distributions and so on.

For example, A Telecom fraud analysis may include parameters like lifetime of customer, average number of calls per month, amount due and average delay in bill payment.

**Deliverables of the project:**

*List of Questions which model will answer :*

- Model will help Insurer to decide on the possibility of fraud in the claim submitted and then take required action.

*Details of Model :*

Model will be built using Decision Tree.

**Resources :**

Data set source : To be procured

Software : R studio with appropriate software packages, MS Excel 2013, Tableau 9.3 for data visualization

References : n/a

**Team Members :**

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**Milestones with timeline:**

| Sl No | Milestones | Start date | Finish date | Grading |
|---|---|---|---|---|
| 1 | Define a problem | 10 Sep'16 | 15 Sep'16 | 5% |
| 2 | Get the Data | 15 Sep'16 | 1 Oct'16 | 5% |
| 3 | Explore and pre-process data | 2 Oct'16 | 15 Oct'16 | 10% |
| 4 | Create Features | 16 Oct'16 | 30 Oct'16 | 5% |
| 5 | Create Model | 1 Nov'16 | 15 Nov'16 | 15% |
| 6 | Deploy & consume model | 15 Nov'16 | 22 Nov'16 | 10% |
| 7 | Report Writing | 23 Nov'16 | 3 Dec'16 | 10% |
| 8 | Project submission | 3 Dec'16 | 14 Jan'17 | 15% |
| 9 | Final presentation with project/ product demonstration | 14 Jan'17 | 28 Jan'17 | 20% |
| 10 | Blog publishing | 29 Jan'17 | 10 Feb'17 | 5% |