CS389 INNOVATION LAB

IoT - Network Intrusion Detection System

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PROBLEM STATEMENT

Network Intrusion Detection based on various machine learning & deep learning algorithms using UNSW-NB15 Dataset

Performing Binary and Multi-class Classification & testing scoring metrics

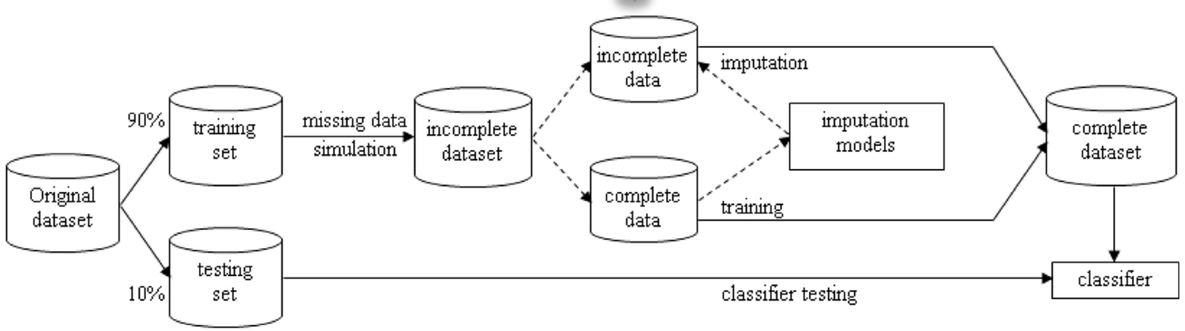
MOTIVATION

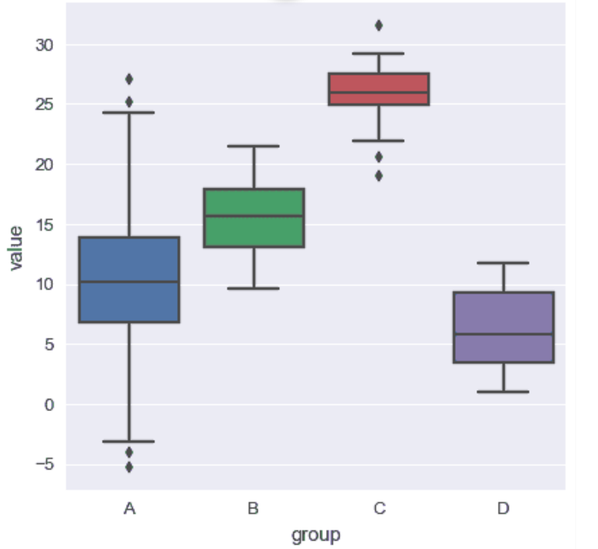
- Interest in Machine Learning Domain
- What Innovation will I contribute to ? (Target)

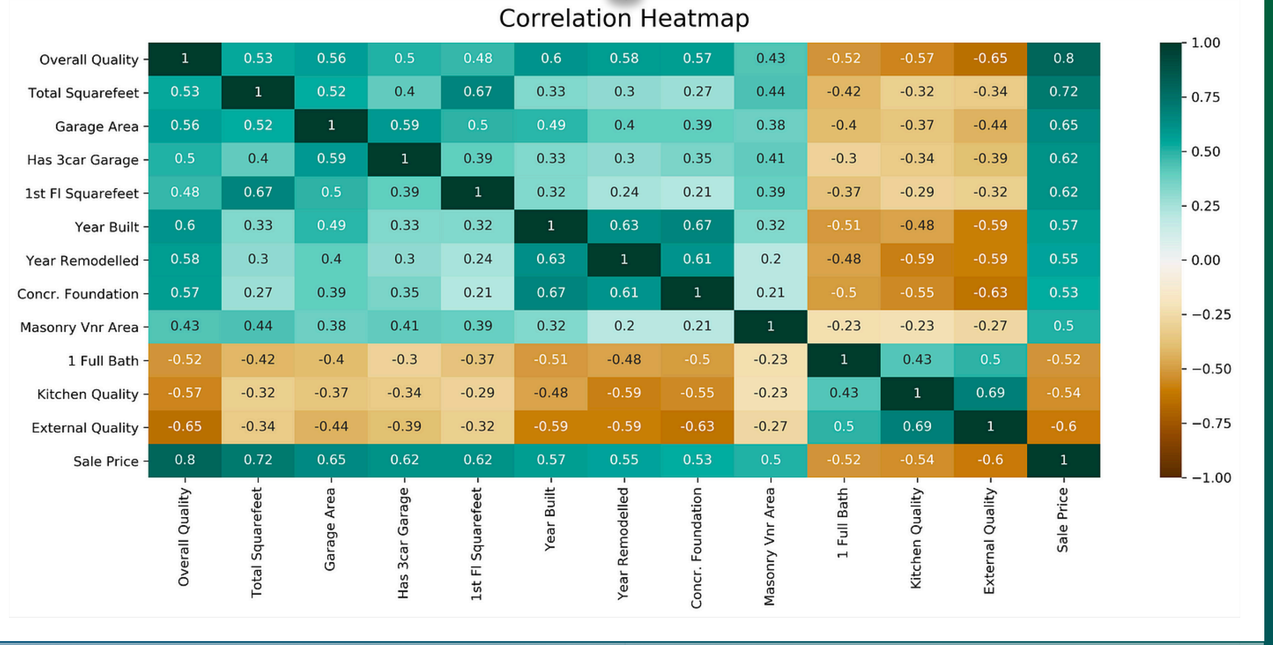
  Better preprocessing of the dataset than already available methods. Performing best feature selection to favour model training. Trying large number of algorithms, tune their parameters & hyper parameters, and test their performance based on many statistical methods in order to find the best algorithm to perform classification of a new example.

PROGRESS TILL NOW

- Preprocessing Techniques
- Exploratory Data Analysis (EDA)
- Feature Selection
- Classification Algorithms
- Hands on Experience of Libraries that will be used
- Hyper parameter tuning techniques







State (Nominal Scale)	State (Label Encoding)
Maharashtra	3
Tamil Nadu	4
Delhi	0
Karnataka	2
Gujarat	1
Uttar Pradesh	5

YET TO LEARN / TASKS REMAINING

- Statistical Analysis Techniques
- Getting Better Domain Knowledge
- PyTorch
- Pickle
- Compiling the Whole Notebook

THANK YOU !