GROUP NO: 02

INTRUSION DETECTION IN COMPUTER NETWORKS USING ML ALGORITHMS

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Project Guide :

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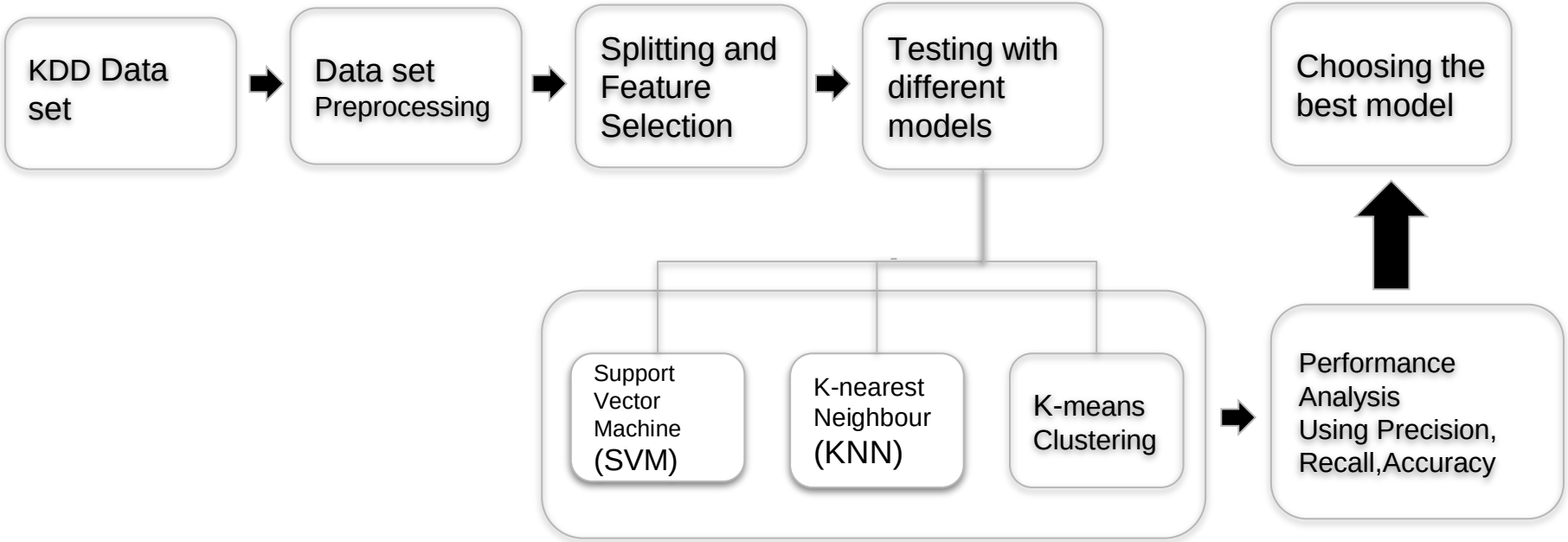
Objective

The objective of the project is to make a performance analysis of following algorithms: KNN, k-means clustering and SVM on intrusion detection.

Methods


KDD Data set
Data set Preprocessing
Splitting and Feature Selection
Testing with different models
Choosing the best model
Support Vector Machine (SVM)
K-nearest Neighbour (KNN)
K-means Clustering
Performance Analysis Using Precision, Recall,Accuracy

Result and Discussion

Algorithm	Accuracy(%)			
	Binary Class		Multi-class	
	Train	Test	Train	Test
KNN	95.94	91.67	94.19	90.40
SVM	96.01	94.39	95.91	93.24

Algorithm	Accuracy(%)	
	Train	Test
K-Means Clustering	70.08	70.84

No. of Features : 42

Data Filtering : Label Encoding, Interpolation, Normalization

Feature Selection : PCA (15 comp.)

Performance analysis of ML algorithms for intrusion detection on KDD CUP 99 dataset is done for both binary and multiclass attacks, and found that SVM algorithm performs better compared to KNN and K- Means Clustering.

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