MACHINE LEARNING PROJECT

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MALWARE AND NETWORK ANOMALY DETECTION

PROBLEM STATEMENT

With the advancement of technology, network security and detection of attacks in real time are crucial. As part of the semester course project, we would like to use machine learning techniques to explore:

->Virus and Malware Detection (Classification)
Classify PE32 executables as malware/not malware
->Network Anomaly Detection (Classification)
Detect attacks on networks using datset containing trafic logs and connections

LEARNING ALGORTIHMS

->Naive Bayes
->Decision Trees
->Logistic Regression
(We will choose the most optimal algorithm among the above mentioned)
->SVM
->Random Forest (Will use ensemble approaches)

TRAINING APPROACHES

We would like to try both Stochastic Gradient Descent and Batch Gradient Descent.

MODEL SELECTION AND PARAMTER TUNING

We would try various models(linear, nonlinear and Gaussian) and use cross validation to choose the optimal values.

DATASET AND CODE

All the code and Datsets will be available at:
->https://github.com/vduddu/MachineLearning/tree/master/Netsec_Malware