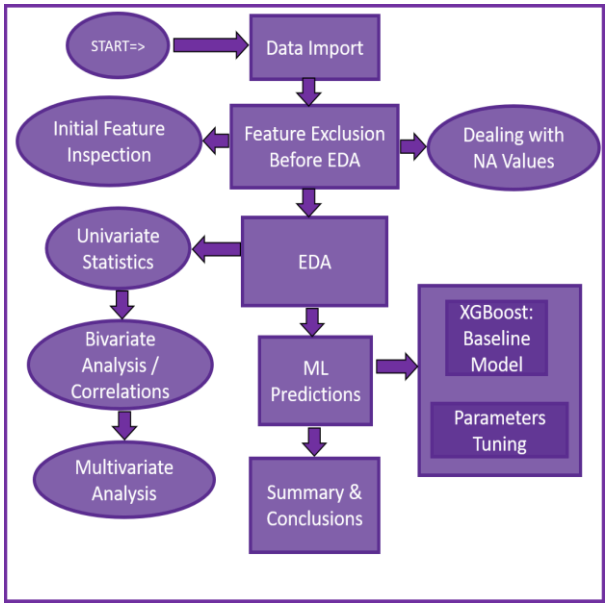
Malware Prediction Using Machine Learning

Priyal Nile
pan303@nyu.edu

Introduction

Abating the risk of malware by using modern machine learning techniques by malware occurrence prediction in the future, based on the system configuration.

Methodology



Conclusion

The baseline model we used, i.e. XGBoost provides a good accuracy of 69.40%. Creating new features based on the crucial features used in our model the accuracy can be further increased.

Future Work

There is a possibility of creating a probabilistic time series modeling. We can further enhance the performance & accuracy by doing more advanced feature engineering, ensemble modeling & Neural Network implementation.

Dataset

Data	DataSize	Records
Train Data	4.08 GB	9 Million
Test Data	3.54 GB	8 Million

Results

ML Model	Data	Accuracy
XGBoost	Training	71.80%
XGBoost	Testing	69.40%

References

[1] https://www.kaggle.com/c/microsoft-malware-prediction/overview
[2] https://dl-acm-org.proxy.library.nyu.edu/citation.cfm?id=3318448
[3] https://dl-acm-org.proxy.library.nyu.edu/citation.cfm?id=3196515
[4] XGBoost Documentation: https://github.com/dmlc/xgboost
[5] Cornell University: Computer Science: XGBoost: A Scalable Tree Boosting System https://arxiv.org/abs/1603.02754