IEDS 3525: Intrusion Detection and Prevention Systems

Lab6: Developing a Machine Learning Based Intrusion Detection System

In this lab, you will design a machine learning-based Intrusion Detection System. The following link describes the dataset you will be downloading from Blackboard:

https://www.kaggle.com/datasets/sampadab17/network-intrusion-detection?resource=download

The following tutorials describe the classification process using Python:

https://www.geeksforgeeks.org/getting-started-with-classification/

https://towardsdatascience.com/solving-a-simple-classification-problem-with-python-fruits-lovers-edition-d20ab6b071d2

https://medium.com/analytics-vidhya/building-classification-model-with-python-9bdfc13faa4b

Write a Python program to create two classifiers using any two classification algorithms described in the tutorials above. Train the classifiers using the "Train_data.xlsx" and test the classifiers using the "Test_data.xlsx" datasets. Compare the classifiers based on Accuracy, Precision, Recall, and F1 Score.

Which classifier performed well between the two chosen classification models?

Submission & Demonstration

1. Please upload the Python files to the Blackboard folder. Please do not upload a **ZIP** folder.
2. Write a lab report describing all the steps and results. Upload the lab report.
3. **Important**: The lab must be demonstrated during the lab hour; without a demonstration, a grade of Zero will be assigned.