

Configuration Manual

MSc Internship
Cyber Security

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MSc Project Submission Sheet
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Configuration Manual

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Summary

This configuration manual detail the capabilities and structures of the technologies used in the course of this study. It make available the precept on how best to reproduce the research. Section 1 describes how we were able to set up Anaconda3 on a Windows operation system.

1 Anaconda3

Anaconda is an enterprise-ready, safe, and accessible data science platform. It is an open-source tool designed for data analysis and machine learning. Below are steps to installing the package in Windows.

- 1.0 Download Anaconda installer. Upon completion of the download, confirm the reliability of the file by using sha254sum or any other tool.
- 2.0 Double click the installer to lunch.
- 3.0 Click next.
- 4.0 Read the licensing terms, and click 'I Agree'.
- 5.0 Select an install for "Just Me" unless you're installing for all users (which requires Windows Administrator privileges) and click next.
- 6.0 Select a destination folder to install Anaconda and click the Next button.
- 7.0 Choose whether to add Anaconda to your PATH environment variable.
- 8.0 Choose whether to register Anaconda as your default Python.
- 9.0 Choose whether to register Anaconda as your default Python
- 10.0 Click the Install button.
- 11.0 After a successful installation you will see the "Thanks for installing Anaconda" dialog box.

2. Creating Environment

After a successful installation of Anaconda. Use Anaconda PowerShell Terminal to create environment.

- 1.0. Conda create -n venv.
- 2.0. Conda activate venv.
- 3.0. Conda install tensorflow keras numpy

3. Folder structure

Visual Studio Code was used for the deployment of the proposed system. This section we installed some required tools and setting up the integrated development environment (IDE).

1.0 The structure of the program folder is displayed in Figure 1

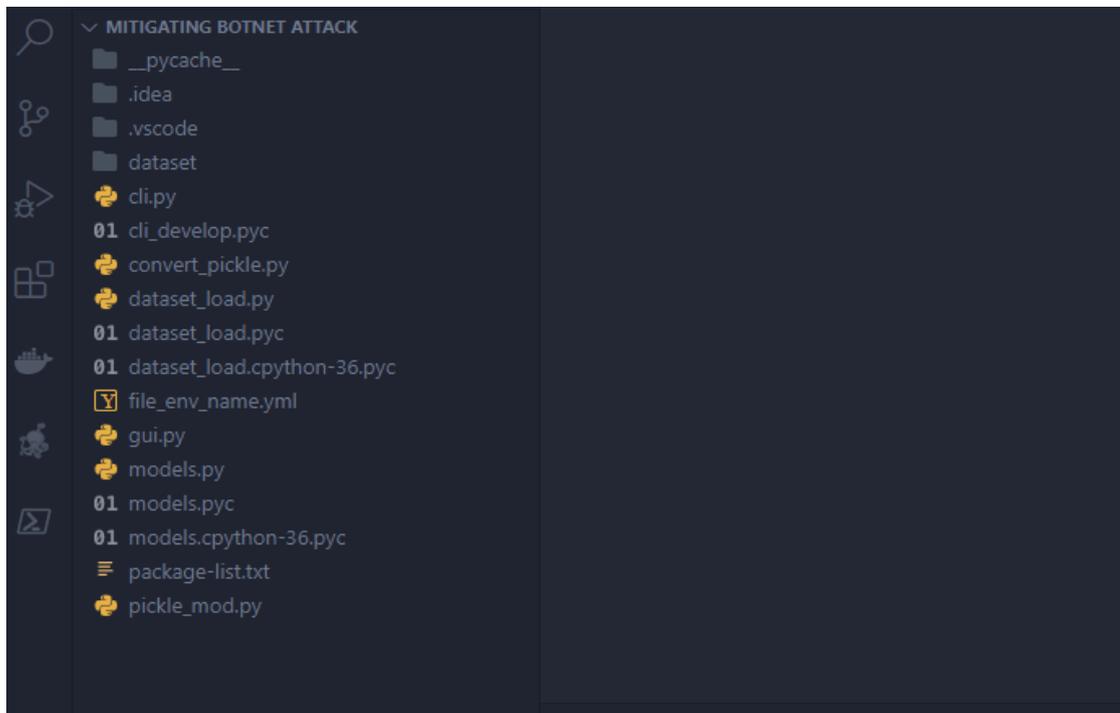


Figure 1. Structure of the program folder

4. Additional tools

The following libraries were imported into the Visual Studio Code. See figure 2 below.

```
import os, sys
from sklearn.linear_model import *
from sklearn.svm import *
from sklearn.tree import *
from sklearn.naive_bayes import *
from sklearn.neighbors import *
from keras.models import *
from keras.layers import Dense, Activation
from keras.optimizers import *
import numpy as np
import threading
```

Figure 2. Libraries import

5 Run Application

1.0. Python gui.py

The system presents a simple software that select the machine learning model according to the various types botnet features used for the training of the model. See Figure 3 below.

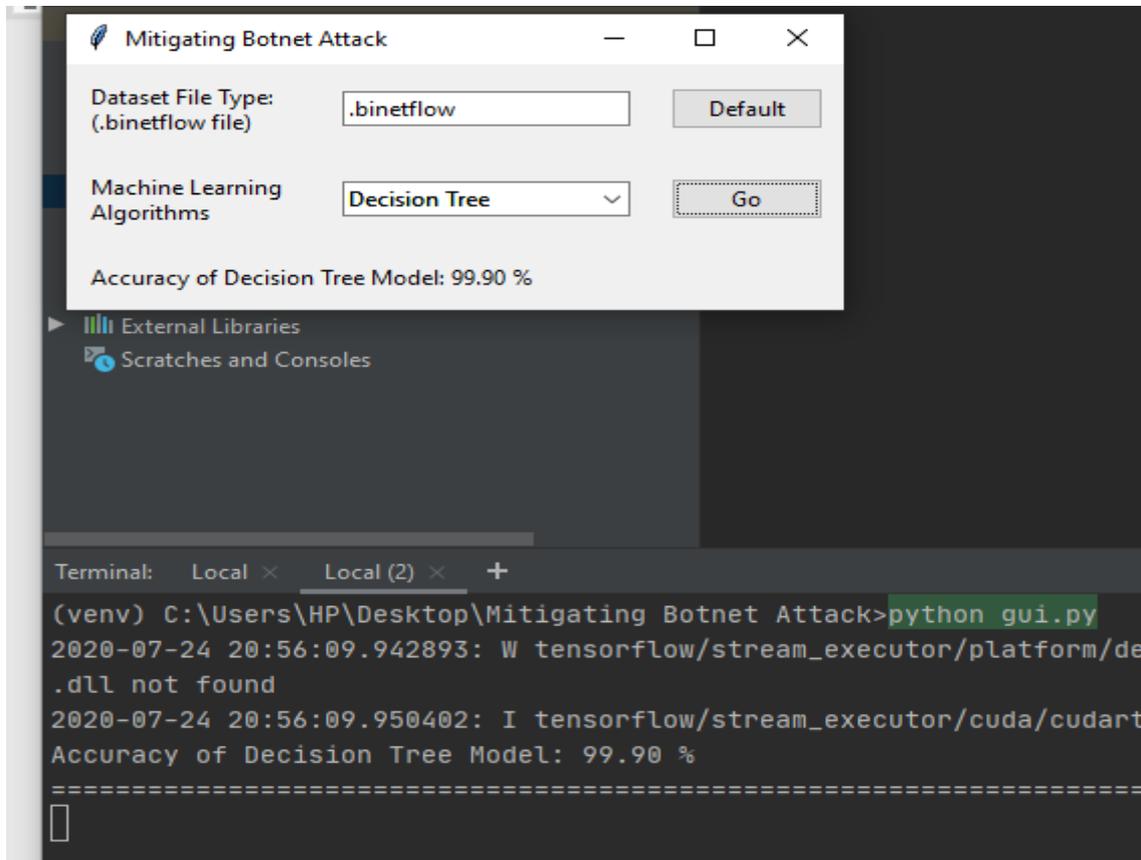


Figure 3 botnet detection system.