

Configuration Manual

MSc Academic Internship CyberSecurity

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MSc Project Submission Sheet

School of Computing

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1.Introduction:

This article will give us a glance on how the implement is done and executed on the system and also how it can be done on other systems. This prototype or the model that has been implemented is created to detect the malware in a system, this prototype will detect the malware in a large scale. In this we will be discussing how to configure the system to run the proposed model in the respective system. This proposed method performs well and the accuracy achieved is good on the basis of the dataset which is in a large scale. In the below mentioned sections we will be talking about how to install the softwares and system version so that the model is compatible and is executed successfully.

2. Configuration of System:

The below mentioned detail consists of the software and hardware requirements to implement the model.

2.1. Hardware Configuration:

- Operating system: Windows 7 or Later
- Processor: CPU cores should be 2 or more
- System: It is compatible to 32- bit and 64-bit
- Hard disk: 256GB to 4TB
- SSD: 256 GB or more (Not Compulsory)
- RAM: More than 2GB or 2GB

2.2. Software Configuration:

This section involves all the software that needs to be installed before we start the implementing the model and further.

Tool	Version	Illustration
Python (32bit or 64-bit)	3.8	Python programming is used
		for creating the model and
		how should the model work
Microsoft Excel	2019	Microsoft excel is used to
		open the datasets and
		create a new dataset
		accordingly.
Anaconda	5.3.0	Anaconda is used because
		many IDE related to data
		science are available on one
		platform
Jupyter Notebook	6.0.3	Jupyter Notebook is used
		because it gives us live
		output and gives us a better
		understanding of work and
		also has visualization.

1.https://www.python.org/downloads/release/python-380/

2. <u>https://www.anaconda.com/products/individual</u>

3. Installations:

This section will tell you how to install all the software, step by step installations of each is explained below in detail

3.1. Python Install:

3.8.0 is the latest version of python and it is available in their official website; you can download any system compatible version such as 32-bit or 64-bit

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	About Downloads	Documentation Co	mmunity Success Sto	ories News Ever	nts
Dov Looki Linux, Want Docke Looki	wnload the latest wload Python 3.8.5 Ing for Python with a different O (UNIX, Mac OS X, Other to help test development versio rr Images ng for Python 2.7? See below for	version for Windo S? Python for <u>Windows</u> , Ins of Python? <u>Prereleases</u> , r specific releases	ws		
Active Python	Releases	Guide.			
Active Python For more informati Python version	Releases on visit the Python Developer's Maintenance status	Guide. First released	End of support	Relea	use schedule
Active Python For more informati Python version 3.8	Releases on visit the Python Developer's Maintenance status bugfix	Guide. First released 2019-10-14	End of support 2024-10	Relea	nse schedule P 569
Active Python For more informati Python version 3.8 3.7	Releases on visit the Python Developer's Maintenance status bugfix security	Guide. First released 2019-10-14 2018-06-27	End of support 2024-10 2023-06-27	Relea	ese schedule P 569 P 537
Active Python For more informati Python version 3.8 3.7 3.6	Releases on visit the Python Developer's Maintenance status bugfix security security	Guide. First released 2019-10-14 2018-06-27 2016-12-23	End of support 2024-10 2023-06-27 2021-12-23	Release	hse schedule P 569 P 537 P 494
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3.2. Anaconda Install:

The anaconda software is totally free and you can download it from their official website and do the registration part and run it on the respective system. The below figure shows from where you can install and how.

	Anaconda Installer	S
Windows 🕊	MacOS 🗯	Linux 💩
Python 3.8 64-Bit Graphical Installer (466 MB)	Python 3.8 64-Bit Graphical Installer (462 MB)	Python 3.8 64-Bit (x86) Installer (550 MB)
32-Bit Graphical Installer (397 MB)	64-Bit Command Line Installer (454 MB)	64-Bit (Power8 and Power9) Installer (290 MB)

3.3. Microsoft Excel:

Most of the Laptops and desktop comes with inbuilt Microsoft Installed in which you get Excel installed and use it. There are some laptops and desktops who don't have excel pre-installed. Excel is not a free software; you will need to pay for it if it is not installed in the respective laptop or desktop. The below figure shows how and where to install Excel.

Microsoft Hom	Devices 🗸 Software 🗸 Games & entertainment 🗸 Deals Shop Business Students & parents Gift Cards All Microsoft 🗸	Search 오 Cart 몇 Sign in (용
	Excel Microsoft Corporation	€135.00 Buy now
X	For 1 PC or Mac Turn data into useful insights Compatible with Windows 10 or macOS More	Downloadable products will be delivered to you by a download link becoming available after completing purchase.
Get Excel plus all the Office a	ps and 1 TB cloud storage with Microsoft 365 for one low monthly price.	For up to six users For one user

4. Working:

In this section the explanation on how to start with the implementation as a beginner perspective.

Step 1: Run the anaconda Software. The below figure shows the user interface of anaconda.



Step 2: Click on the Jupyter Notebook which is the 3rd from the left. The below figure shows you the interface of the Jupyter notebook.

Thes Truining Gusters		
select items to perform actions on them.	Upload	New -
	Name Python 3	:e
D Objects	Other	
Characteria AndroidStudioProjects	Text File	_
Cansel	Folder	
Cisco Packet Tracer 7.2	Terminal	
Contacts	a month ago	
Creative Cloud Files	a year ago	
Desktop	6 minutes ago	
Cocuments	a month ago	
Downloads	13 minutes ago	
Favorites	a month ago	
Links	a month ago	
Grosoft	a year ago	
La Music	a month ago	
CneDrive	12 days ago	
C Pictures	a month ago	
Carl Saved Games	a month ago	
Constant Searches	a month ago	
C Videos	16 hours ago	
CirtualBox VMs	5 months ago	
C Zotero	2 months ago	
B Untitled.ipynb	2 months ago	72
Intitled1.ipynb	a month ago	1.18 ki
🗌 🖉 Untitled2 invnb	Running 9 days ago	55.3 kl

In the above figure there is an option called "New" in which you need to select the language as python 3. Then a new interface will be opened and you can proceed with the further coding process.

Step 3: After the installation is complete. coding part is started, but before building the model or train the dataset we need to import some packages that we will need. The below figures show the packages that are been installed in python language.

```
In [1]: import numpy as np
import matplotlib.pyplot as plt
import pandas as pd
```

In [13]:	import pandas as pd
	import numpy as np
	<pre>from sklearn.model_selection import train_test_split</pre>
	<pre>from sklearn.ensemble import RandomForestClassifier import sasharp as sns</pre>
	import seaborn as sns

Step 4: The next step is to load the dataset and also to give the command to train them by splitting them into two parts which is Training dataset and Test dataset. The figure below shows how we have loaded the dataset and the split.

Step 5: After splitting the data, we then further move to the coding part where we tell what and how the model should perform the detection based on the individual model that we have compared. The below figure shoes how the detection took place and how much malware and benign files have been detected.

```
Confusion matrix, without normalization [[2486 3849] [3887 6821]]
```

