

Configuration Manual

MSc Research Project
Data Analytics

Ritu Verma
Student ID: X18181040

School of Computing
National College of Ireland

Supervisor: Christian Horn

National College of Ireland
Project Submission Sheet
School of Computing



Student Name:	Ritu Verma
Student ID:	X18181040
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Configuration Manual

Ritu Verma
X18181040

1 Introduction

This document supports relevant knowledge regarding the tools of software which are used to develop this research work.

2 Environment Specification

2.1 Hardware

- Operating system: Windows 10 Home,
- Processor: Intel(R) Core(TM) i5-7200U CPU @2.50GHz, 2.70 GHz,
- Installed Memory (RAM): 8.00 GB,
- System Type: 64-bit Operating System, x64-based processor.

As, huge amount of data is dealt in neural network analysis, so resources of high amount are required for learning of various models. So, high throughput hardware is advisable.

3 Prescribed software

As, python v3.8 is used for the development this project, as it's a cumbersome process to configure and install each software. Hence, Anaconda Navigator as a packaged tool is used. It consists required things for the project.

3.1 Download process

Download how and where?

3.1.1 Anaconda Navigator

It is a packaged software which is used to manage RIDE's and python with relevant and required libraries. Download 32 bit or 64bit depending upon the operating system.

3.2 Python

Python is an easily available open source software which can be downloaded. Python 3 is used during development and implementation of the project as it supports for newer software. However, my code I have not tested on python-2 version¹.



Figure 1: Download Python

4 Dataset

Dataset used in this research is NSL-KDD dataset. It is polished version of KDD dataset. Dataset is available in the zip file in configuration package. (KDDTrain +_2.csv and KDD Test +_2.csv)

Please find the link also to the dataset².

5 Required Software Installation

5.1 Anaconda

Process to install anaconda is similar to python.

5.2 Python

Installation of python is similar to any software installation in windows. Consider the option default not any other additional option.

¹Download link: <https://www.python.org/downloads/>

²<https://www.unb.ca/cic/datasets/nsl.html>

6 Steps to be taken post installation:

6.1 Update software conda

Once, anaconda is installed successfully, command line interface and graphical user interface (cmd/terminal)

Search for “Anaconda Prompt” and open it.

Below are the basic commands that needs to be executed first,

- use Conda update command.
- use anaconda update command.
Once installation is successful,
- Software needs to be restarted.

6.2 Install require packages

Pandas

Matplotlib

Numpy

Tensorflow with Keras

SciKit-Learn

Seaborn

7 Code Execution Steps

- ICT Zip file needs to be downloaded with all required files.
- Extract the files.
- Through anaconda GUI, open jupyter or spyder.
- Ipynb file needs to be open in jupyter and .py files in spyder.
- Path needs to be changed with the path , which would refer to the dataset in the relevant folder.
- Code can be run at a time, or one by one.

There are two ipynb files, NSL-KDD detector file name is the final code in context to final thesis. KDD-comment name ipynb file is just the reference file for approach 1.

References