

Configuration Manual

MSc Research Project
MSc in Cyber Security

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MSc Project Submission Sheet
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Configuration Manual

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Jupyter Notebook is an interactive computing environment that allows users to write and execute Python code, visualize data, and document their workflows seamlessly. If you have a Python file (.py) and wish to open it in Jupyter Notebook, follow the steps below.

1 Install Python

Download and install python from the official website. And ensure python and pip is added to your system path

Command:

Pip –Version

Python –Version

2 Install Required Libraries

Install dependencies below using pip.

Pandas- Pip install pandas

Numpy- Pip install numpy

Scikit-learn- Pip install scikit-learn

Torch- pip install torch

3 Install Jupyter Notebook

Before proceeding, ensure Jupyter Notebook is installed on your system. Use the following command to install it: pip install notebook

4 Launch Jupyter Notebook

1. Open a terminal (or command prompt): Navigate to the directory containing your Python file using the `cd` command. For example: `cd path/to/your/python/file`
2. Launch Jupyter Notebook by typing: `jupyter notebook`
3. This command will open the Jupyter Notebook interface in your default web browser.

5 Create a Notebook

If you want to work with the Python file in notebook format:

1. In the Jupyter Notebook interface, click **New** (on the right-hand side) and select **Python 3 (ipykernel)**. This will create a new notebook file.
2. Name your notebook by clicking the title (e.g., Untitled) at the top of the page and typing a new name.

6 Open or Import a Python File

Copy and Paste Code

1. Open the Python file in a text editor (e.g., Notepad, VSCode, PyCharm).
2. Copy the code.
3. Paste the code into a cell in the Jupyter Notebook.

7 Save and Run the Notebook

Once your code is in the notebook, you can execute it cell by cell using **Shift + Enter**. Save your work by clicking the **Save** icon or pressing **Ctrl + S**.

By following these steps, you can easily open and work with Python files in Jupyter Notebook for better code management and interactivity.

8 Prerequisites

The hardware and software requirements are follows.

Hardware Requirements

- System with 8gb ram
- Multi-core processor for fast training
- Disk space at least 5gb for dataset and models

Software Requirements

- OS- Windows, Mac, or Linux
- python

References

TensorFlow 2024, *TensorFlow*. Available at: <https://www.tensorflow.org/> (Accessed: 11 September 2024).

Scikit-learn. (n.d.). *scikit-learn: Machine Learning in Python*. Available at: <https://scikit-learn.org/stable/> [Accessed 12 September. 2024].

PyTorch. (n.d.). *torch: Tensors and Dynamic neural networks in Python with strong GPU acceleration*. Available at: <https://pypi.org/project/torch/> [Accessed 12 September. 2024].

MLG-ULB. (n.d.). *Credit Card Fraud Detection dataset*. Available at: <https://www.kaggle.com/datasets/mlg-ulb/creditcardfraud> [Accessed 12 September. 2024].