

Configuration Manual

MSc Research Project
Artificial Intelligence

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Module:

Lecturer: Lavish Thomas

Submission

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Project Title: Deep Learning and Machine learning to improve the operation of a shared bike system, a case study of DublinBikes

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Signature: Raghav Raghu

Date: 11 August 2025

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1 Python Libraries to install

Install the following python libraries in your python environment before running the code:

1. pandas
2. numpy
3. pytorch
4. sklearn
5. matplotlib
6. folium
7. geopy
8. sklearn.cluster

The rest of the tools to be imported are imported in the .ipynb file itself.

Make sure you have python version 3.11.9 or higher before you run the code. (the research code was carried out on the mentioned python version)

2 Instructions to run the code

To run the code file follow the following steps:

1. Unzip the code file.
2. Make sure the python jupyter notebook and the .csv files are present in the same folder before executing the code.
3. Either run each block of the jupyter notebook separately or run all of them top down.

3 Output for the DBSCAN map analysis

The output for the final phase of the analysis which is the geospatial DBSCAN analysis will be saved in the same folder as the jupyter notebook and it will be saved as a .html file which can be opened in any browser (preferably google chrome).

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