

Configuration Manual

MSc Research Project Msc Data Analytics

Karan Sonawane Student ID: x22167005

School of Computing National College of Ireland

Supervisor: Prof. Christian Horn

National College of Ireland



MSc Project Submission Sheet

- -		-	
School	lof	Com	puting

Student Name:	Karan Sonawane		
Student ID:	x22167005		
Programme:	Msc Data Analytics	Year:	2023 - 2024
Module:	Msc Research Project		
Lecturer: Submission Due Date:			
Project Title:	A Comparative Analysis of Machine Learning T Power Forecasting	Fechniqu	es for Solar
Word Count:	Page Count:		

I hereby certify that the information contained in this (my submission) is information pertaining to research I conducted for this project. All information other than my own contribution will be fully referenced and listed in the relevant bibliography section at the rear of the project.

<u>ALL</u> internet material must be referenced in the bibliography section. Students are required to use the Referencing Standard specified in the report template. To use other author's written or electronic work is illegal (plagiarism) and may result in disciplinary action.

Signature:	Karan Sonawane
------------	----------------

Date:14/12/2023.....

PLEASE READ THE FOLLOWING INSTRUCTIONS AND CHECKLIST

Attach a completed copy of this sheet to each project (including multiple	
copies)	
Attach a Moodle submission receipt of the online project	
submission, to each project (including multiple copies).	
You must ensure that you retain a HARD COPY of the project, both	
for your own reference and in case a project is lost or mislaid. It is not	
sufficient to keep a copy on computer.	

Assignments that are submitted to the Programme Coordinator Office must be placed into the assignment box located outside the office.

Office Use Only

Signature:	
Date:	

Penalty Applied (if applicable):	

Configuration Manual

Karan Sonawane Student ID: x22167005

1 Section 1

The solar power forecasting solution is designed to ingest meteorological data from various weather stations, apply machine learning models on the data to forecast next-day power output values for solar plants at each location

2 Section 2

Data Description: - In the current analysis, power output from horizontal photovoltaics installed in 12 locations in the northern hemisphere is predicted. The collection locations were selected from a larger dataset of all Department of Defence (DoD) installations located within 25 regions. It consists of 14 months of power output, location, and weather data. This dataset accompanies the paper "Machine Learning Modeling of Horizontal Photovoltaics Using Weather and Location Data" submitted to the Journal of Renewable Energy. Independent variables in each column include location, date, time sampled, latitude, longitude, altitude, year and month, month, hour, season, humidity, ambient temperature, power output from the solar panel, wind speed, visibility, pressure, and cloud ceiling.

3 Section 3

Zip File Titled as Solution Artefact contains the following files:

- 1. Solar_dataset.csv
- 2. Final_code.ipynb
- 3. Le_loc.pkl
- 4. Le_seas.pkl
- 5. Stackingclassifier, sav
- 6. Standardscaler.pkl

Extract the zip file into local system to run the code