SOLAR ENERGY ANALYSIS

PRESENTED BY

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SDG:7 AFFORDABLE AND CLEAN ENERGY

As climate change concerns continue to grow, global reliance on renewable sources has been increasingly sought out in order to not only follow a greener path, but to specifically address Sustainable Development Goals – SDG 7: Affordable and Clean Energy, and SDG 13: Climate Action. Solar energy provides clean energy, but it remains a hard area to maximise due to the uncontrollable factors of nature, which ultimately leads to variability in solar generation. All these factors make solar power forecasting an indispensable task when it comes to efficient energy management systems, plannings, and resource utilizations.

OVERVIEW

In this project, we focus on estimating how much energy a solar plant can produce by looking at past generation of the plant and weather conditions. Through the use of python ML models, the objective is to build a model that manages to forecast solar generation for a given weather scenario. Such models are a useful piece of machinery for solar plant operators as they can enhance the decision making by improving resource distribution and assisting in sustainable energy consumption as well.

PROJECT

This task is dependent on using Machine Learning given its sophistication in recognizing intricate structures within extensive amounts of data, self adjusting in real time, and providing forecast abilities which would be impossible otherwise. This project shows the other side of ML: how it changes the game for the renewable business.

For this project, I utilized a combination of Python libraries, HTML/CSS, and Flask to build the application and ensure efficient data processing, model training, and user interaction

ASSIGNMENT-1

Solar Yield EDA & Prediction model

CODE

PROJECT REPORT

GITHUB

ASSIGNMENT-2

Flask based UI for Prediction Model

CODE*

PROJECT REPORT *

GITHUB*

*to be submitted on 15th november 2024

ASSIGNMENT-3

Applying XAI techniques and modelling a research paper based on the project

RESEARCH PAPER*

REPORT *

GITHUB*

THANKYOU

DRIVE FOLDER

GITHUB