Predicting Wind Power in an Area Based Off Environmental Conditions

Project Description

For my project, I will be attempting to create a model that can predict wind power generated on each day throughout the year in a given location, using a variety of different variables including wind speed, temperature, humidity, etc. My model will also be able to distinguish what type of wind turbine should be used for optimal performance on each day compared to the rest.

Six Steps

1. Multimodal Data Generation: Data will be collected from a open sourced website such as Kaggle.
2. Extraction of Mechanistic Features: Data will be taken from the dataset and processed into the right units and forms.
3. Dimensional Reduction: Data will be analyzed to determine what factors impact the wind power in a given area the most.
4. Reduced Order Surrogate Models: A model will be created based off strongest factors
5. Regression and Classification: Regression will be performed to correlate how well the model fits the data
6. System and Design: The model can be used to design wind power plants.