TEAM ID:PNT2022TMID12853

LITERATURE SURVEY: Predicting the energy output of wind turbine based on weather condition

S.NO	PAPER TITLE	AUTHORS	ADVANTAGES	REFERENCELINK
1.	Predicting the Energy Output of Wind Farms Based on Weather Data: Important Variables and their Correlation	Ekaterina **(**Katya**)** Vladislavleva, Tobias fedriech, Frank Neumann, Markus Wagner	wind energy output can be predicted from publicly available weather data with accuracy at best 80% R2on the training range and at best 85,5% on the unseen test data	https://www.researchgate.net/publication/229812149_Predicting_the_Energy_Output_of_Wind_Farms_Based_on_Weather_Data_Important_Variables_and_their_Correlation
2.	Current methods and advances in forecasting of wind power generation.	A. M. Foley, P. G. Leahy ,A.Marvuglia, and E. J. McKeogh.	Firstly, numerical wind prediction methods from global to local scales, ensemble forecasting, upscaling and downscaling processes are discussed. Then the techniques used for benchmarking and uncertainty	https://www.sciencedirect.com/science/article/abs/pii/S0960148111002850

TEAM ID:PNT2022TMID12853

			analysis of forecasts are overviewed, and the performance of various approaches over different forecast time horizons is examined. Finally, current research activities, challenges and potential future developments are appraised.This paper presents an in-depth review of the current methods and advances in wind power forecasting and prediction	
3.	Short-term prediction of wind farm power: A data mining approach	A. Kusiak, Zheng, and Z. Song.	This paper examines time series models for predicting the power of a wind farm at different time scales, i.e., 10-min and hour-long	https://ieeexplore.ieee.org/document/4749292

TEAM ID:PNT2022TMID12853

			intervals. The time series models are built with data mining algorithms. Five different data mining algorithms have been tested on various wind farm datasets. Two of the five algorithms performed particularly well. The support vector machine regression algorithm provides accurate predictions of wind power and wind speed at 10-min intervals up to 1 h into the future, while the multilayer perceptron algorithm is accurate in predicting power	

TEAM ID:PNT2022TMID12853

			over hour-long intervals up to 4 h ahead. Wind speed can be predicted fairly accurately based on its historical value	
4.	Analysis of wind energy time series with kernel methods and neural networks	O. Kramer and F. Gieseke.	This article shows how kernel methods and neural networks can serve as modeling, forecasting and monitoring techniques, and, how they contribute to a successful integration of wind into smart energy grids. First, we will employ kernel density estimation for modeling of wind data. Kernel density estimation allows a statistically sound modeling	https://ieeexplore.ieee.org/document/6022597

TEAM ID:PNT2022TMID12853

			of time series data. The orresponding experiments are based on real data of wind energy time series from the NREL western wind resource dataset. Second, we will show how prediction of wind energy can be accomplished with the help of support vector regression. Last, we will use self-organizing feature maps to map high dimensional wind time series to colored Sequences that can be used for error detection.	
5.	The prediction and diagnosis of wind turbine faults	Andrew Kusiak,Wenyan Li	The rapid expansion of wind farms has drawn attention to operations and maintenance issues. Condition	https://www.sciencedirect.com/science/article/abs/pii/S0960148110002338?via%3Dihub

TEAM ID:PNT2022TMID12853

			monitoring solutions have been developed to detect and diagnose abnormalities of various wind turbine subsystems with the goal of reducing operations and maintenance costs. This paper explores fault data provided by the supervisory control and data acquisition system and offers fault prediction at three levels: (1) fault and no-fault prediction; (2) fault category (severity); and (3) the specific fault prediction.	
6.	Predicting the Wind Turbine Power Generation based on Weather	S.Preethi,H. Prithika,M. Pramila,S.Birundha	In this paper, an end-to-end web application has been developed to predict and forecast the wind turbine's power	

	Conditions		generation based on the weather conditions. The prediction model has been developed using Bidirectional Long Short-Term Memory which is a unique kind of RNN (Recurrent Neural Network). It performs admirably in terms of capturing long-term dependencies along with the time steps and is hence ideal for wind power forecasting.	
7.	Machine learning ensembles for wind power prediction	Justin Heinnerman ,Oliver Krammer	This paper propose the use of heterogeneous machine learning ensembles for wind power prediction.	https://www.sciencedirect.com/science/article/abs/pii/S0960148115304894?via%3Dihub