Date	01 November 2022
Team ID	**PNT2022TMID05596**
Project Name	**PREDICTING THE ENERGY OUTPUT OF WIND TURBINE BASED ON WEATHER CONDITION**
Maximum Marks	4 Marks

LITERATURE REVIEW

The pattern of wind power is highly erratic in nature. Thus, direct statistical models cannot give accurate predictions. Most of the works in the literature employ hybrid models which combine physical and statistical models. Here is the comparative study on the several papers.

Algorithm	Input parameters considered	Findings of the study
[1] Wind Power Prediction and Pattern Feature Based on Deep Learning Method.		
Deep learning algorithm. - DBN - RBM training process - RBM hidden layer - Down to up approach	- Variation patterns of wind.	This method is effective in improving the prediction accuracy of wind power and prediction error far less than other methods.
[2] Wind Power Prediction with Machine Learning Ensembles		
Machine Learning Algorithms - k-Nearest Neighbors - Decision Tree - Wind Power forecasting:- NWP - Wind Power Predictions:- - Historical time series.	- Radiation - Turbulence - Pressure	For short forecast horizons statistical learning yield superior results with preferably low prediction error.
[3] Using Artificial Intelligence to Predict Wind Speed for Energy Application in Saudi Arabia.		
Machine Learning Algorithms - Randomforest - Randomtree - Reptree - ANN - SVM	- Air temperature - Wind direction - Speed - Global-Horizontal Irradiance (GHI) - Humidity - Pressure	ANN predictions could be improved by conducting additional tests on hidden layers and ANN parameters producing the best RMS and correlation.

Algorithm	Input parameters considered	Findings of the study
[4] Wind Power Pattern Prediction in time series measurement data for wind energy prediction modelling using LSTM-GA networks.		
Deep Learning Algorithm • GA-LSTM	• Wind energy data set.	The Genetic Algorithm model improves the reliability by finding the appropriate number of time lags in the model.
[5] Multi-step Ahead Wind Power Forecasting Based on Recurrent Neural Networks		
Deep Learning Algorithm • LSTM • GRU	• Wind direction • Pitch angle • Generating capacity • Basic parameters of wind turbines.	This methods have significantly better forecasting performances compared with the ARIMA and SVM methods.
[6] Direct Interval Forecast of Uncertain Wind Power Based on Recurrent Neural Networks		
Deep Learning Algorithm (RNN) • Elman Network • NARX Network • Dragonfly Algorithm (for optimization).	• Hourly wind power data.	The proposed RNN prediction model can construct better Prediction compared with the benchmark models.

REFERENCES

[1]Yubo Tan, Hongkunchen Chuang Qiu, "Wind Power Prediction and Pattern Feature Based on Deep Learning Method", http://pipad.org/tmp/WindPower.pdf , 2014.

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