(12) PATENT APPLICATION PUBLICATION
(19) INDIA
(22) Date of filing of Application :02/09/2022

(21) Application No.202241050367 A
(43) Publication Date : 16/09/2022

(54) Title of the invention : AN AI & ML BASED WIND TURBINE CONTROL SYSTEM AND METHOD THEREOF

(51) International classification	:H01J0037320000, A61P0025280000, B41J0002175000, C07K0007060000, G03B0021620000
(86) International Application No Filing Date	:PCT// :01/01/1900
(87) International Publication No	: NA
(61) Patent of Addition to Application Number Filing Date	:NA :NA
(62) Divisional to Application Number Filing Date	:NA :NA

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(57) Abstract :
The present invention relates to a wind turbine control system that modifies the amount of wind energy used using AI and ML. Models for machine learning (ML) that have used to track wind turbine conditions, such as blade fault detection or generator temperature monitoring, are included in the present invention (e.g. blade fault detection or generator temperature monitoring). Using standard machine learning (ML) methods like data sources, feature selection and extraction, model selection (classification, regression), validation, and decision-making, these models are classified. With the help of unstructured SCADA data that has been gathered over time, AI models for performance predictions are developed. The model is able to spot developing flaws, evaluate how serious they are, and project the length of the maintenance lead time. AI technology uses pattern recognition to find faults early rather than waiting for sensor limits to be reached before maintenance begins. Accompanied Drawing [FIG. 2]

No. of Pages : 21 No. of Claims : 7