Base station wind power supply performance abnormality

What are the shortcomings of AI anomaly detection system of wind power equipment?
Appropriate methods can be used to balance data to avoid misjudgment caused by data imbalance.However, at present, the AI anomaly detection system of wind power equipment has some shortcomings, including insufficient allocation of computing resources, poor generalization ability of system model and difficult to ensure data security.

Can a CNN-based anomaly detection system be used in wind power?
The research on anomaly detection systems and methods for WPE based on AI has become a hot topic in the field of wind power. This article adopted a CNN-based method to construct a WPE anomaly detection system,and the effectiveness of this method has been verified through experiments.

What is a data model based on wind power curves?
The first type is the data model based on wind power curves for anomaly data cleaning. Kusiak A et al. used the dataset proximity technique to identify the anomalies by comparing the distances between the data,which requires a large amount of normal data for training to complete the model,and the generalization ability is relatively poor .

Why is wind power data processing important?
The integrated application of wind power data processing helps to promote the development of the clean energy industry, realize sustainable energy supply, and further reduce dependence on traditional energy sources . Some research results have been achieved in the area of cleaning and identification of WTG data by researchers.

High availability of wind power data is the basis for wind power research, but there are a large number of abnormal data in actual collected data, which seriously affects analysis of...

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In this deliverable, we describe a model to detect anomalies in the production of wind power, e.g., unexpected lower production that might impact the energy supply and the regular operation of ...

The WPE anomaly detection system based on CNN has high accuracy and real-time performance, which can effectively detect abnormal situations of WPE. In practical ...

The PQ issues in the proposed system, such as various 3-phase faults and harmonics, are improved in this article by incorporating Wind Energy System (WES)-based ...

Wind power anomaly data detection based on unsupervised methods To cite this article: Hao Zhang et al 2024 J. Phys.: Conf. Ser. 2728 012033 View the article online for updates and ...

Based on analysis of measured data of a wind farm, results show the method can effectively identify various abnormal data, and complete high-quality reconstruction of data, thereby ...

Accurate and credible operation data sets of wind and solar power stations are the basis of many research works. However, such data sets often contain abnormal data due to ...

This provides a reliable data base for further research on the operation law of wind turbines, improvement of wind energy utilization and optimization of wind farm strategies.

Wind energy, being a non-controllable energy source, can cause problems with voltage stability and transient stability in the power system. On the other hand, the increasing use of power ...

In this article, a method is proposed to identify abnormal data in wind power using boundary modeling. The abnormal data are classified into three types based on distribution characteristics.

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