Fault identification of electric energy storage charging pile

Which fault detection method is best for electric vehicle charging pile diagnosis?
A fault detection method based on deep learning Convolutional Neural Networks and Long Short-Term Memory and the proposed CNN-LSTM methodhas the highest accuracy and exhibits the best performance in the electric vehicle charging pile diagnosis.

How accurate is fault detection in DC charging pile?
It is necessary to accurately judge the fault state of the charging module of DC charging pile in order to ensure the safe and reliable operation of DC charging pile. However,the fault signal processing of the fault detection method is poor,resulting in low fault detection accuracy.

What is the error detection procedure of charging pile based on Elm?
This paper proposes an error detection procedure of charging pile founded on ELM method. Different from the traditional charging pile fault detection model,this method constructs data for common features of the charging pile and establishes a classification prediction frame work that relies on the Extreme Learning Machine(ELM) algorithm.

What are the possible faults of DC charging pile?
During the operation of DC charging pile,faults are easy to occur,mainly including communication faults,charging gun faults,charging module faults,etc. Among the possible faults of the DC charging post,the charging module failure rate is extremely high.

Can CS-LR predict smart charging pile faults based on classified data?
CS-LR is first used to classify the fault data of smart charging piles,then the CS-SVMis adopted to predict the faults based on the classified data. The feasibility of the proposed model is illustrated through the case study on fault prediction of real-world smart charging piles.

Why is charging module important in DC charging pile?
Conclusion Charging module is the key to the safe and reliable operationof DC charging pile. The DC charging pile to maintain stable operation state for the charging module fault state identification results,timely development of solution strategies.

The fault rate of power module for electric vehicle charging pile is high and it is difficult to identify and locate the fault. A fault diagnosis method based on neural network is proposed, which provides the necessary reference and premise for the rapid realization of fault state identification and on-site maintenance. Firstly, the ...

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traditional charging pile fault detection model, this method constructs data ...

It is necessary to determine the fault characteristics of the charging module in order to realize the DC charging pile charging module fault state identification, so the fault characteristics of the charging module are analyzed (Bayati et al., 2021) based on the electrical structure of the DC charging pile, which provides a basis for fault ...

5 ???· In order to improve the situation that the fault data set of electric vehicle charging pile has unbalanced data distribution under each fault and the small amount of data leads to the inconspicuous data features, this paper ...

conducted to establish an indicator system for the operation status of charging piles, and a potential fault identification model was constructed. By optimizing the life cycle, the balance problem between optimal maintenance life and optimal opportunity maintenance life has been solved, thus completing preventive maintenance decisions. The ...

Energy management of green charging station integrated with photovoltaics and energy storage system based on electric ... 1. Introduction With last decade has witnessed a great proliferation of electric vehicles (EVs) and an increasing connection between the transportation network and the electricity network of smart cities [1].Owing to the emerging information technologies [2], ...

For CPFD implementation, the LightGBM ensemble learning combined with a grid search cross-validation algorithm is designed to build a fault detection model. Related experiments have proven the proposed methods can achieve the highest diagnostic accuracy, which is superior to other popular methods.

5 ???· In order to improve the situation that the fault data set of electric vehicle charging pile has unbalanced data distribution under each fault and the small amount of data leads to the inconspicuous data features, this paper proposes a method of SAE-MLP model for fault diagnosis of charging pile fault data. This paper firstly utilizes ...

To address this, we designed a simulated charging pile system and collected fault data at multiple power levels by manually introducing faults. Furthermore, we proposed a fault identification algorithm based on spatiotemporal feature fusion using machine learning.

In this article, a real-time fault prediction method combining cost-sensitive logistic regression (CS-LR) and cost-sensitive support vector machine classification (CS-SVM) is proposed. CS-LR is first used to classify the fault data of smart charging piles, then the CS-SVM is adopted to predict the faults based on the classified data. The ...

Abstract: Electric vehicle DC charging stations have always been plagued by frequent malfunctions, difficult

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maintenance, and high repair costs, but traditional fault detection methods are inefficient. Therefore, a diagnostic method is proposed for the operational status of DC charging station charging modules based on wavelet packet ...

With the popularity of new energy vehicles, a large number of cities began to focus on the installation of electric vehicle charging piles. However, the existing intelligent charging piles have faced problems such as ...

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In response to the issues arising from the disordered charging and discharging behavior of electric vehicle energy storage Charging piles, as well as the dynamic characteristics of electric vehicles, we have developed an ordered charging and discharging optimization scheduling strategy for energy storage Charging piles considering time-of-use electricity ...

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