Patent Search

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Abstract:

The presented invention introduces a pioneering solution for proactive fault detection in Internet of Things (IoT) sensors through the integration of advanced predicti and machine learning techniques. By seamlessly collecting and preprocessing sensor data, the system employs dynamic feature extraction and selection methods to patterns indicative of potential faults. Utilizing diverse machine learning models, including neural networks, the invention enables real-time monitoring, facilitating pr detection of anomalies. Proactive fault alerts are generated, empowering operators to intervene preemptively, thereby reducing downtime and minimizing maintenar With adaptive machine learning mechanisms and broad applicability across industries, the invention offers a versatile, cost-efficient, and resource-optimized approac revolutionizing the reliability and efficiency of IoT sensor networks.

Complete Specification

Description:The present invention resides in the field of information technology, specifically within the realm of Internet of Things (IoT) technologies. More specifica
invention pertains to the domain of predictive analytics and machine learning applied to enhance fault detection and maintenance strategies in IoT sensor network
The primary focus of the invention lies in the proactive identification of potential faults in IoT sensors through the utilization of advanced analytical and machine lea
techniques. By employing predictive analytics, the invention aims to foresee and address issues before they manifest, thereby significantly improving the overall reli
efficiency, and longevity of IoT sensor networks.
This innovation is relevant to a diverse array of industries where IoT technologies are employed, including industrial automation, smart infrastructure, healthcare,
agriculture, environmental monitoring, and beyond. The application of predictive analytics for fault detection in IoT sensors addresses the limitations of traditional r
maintenance approaches, providing a more robust and proactive methodology for managing and sustaining IoT ecosystems.

BACKGROUND OF THE INVENTION
The following description of related art is intended to provide background information pertaining to the field of the disclosure. This section may include certain aspe
the art that may be related to various features of the present disclosure. However, it should be appreciated that this section be used only to enhance the understan
the reader with respect to the present disclosure, and not as admissions of prior art.

The advent and widespread adoption of Internet of Things (IoT) technologies have ushered in a new era of connectivity, enabling the seamless integration of physic

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