Patent Search

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Abstract:

An innovative system for electric vehicles (EVs) employing advanced artificial intelligence (AI) and machine learning (ML) algorithms to predict and optimize battery dr system offers real-time, adaptive predictions of battery life based on various factors such as driving patterns, environmental conditions, and battery characteristics. It optimizes battery usage by recommending efficient driving behaviors and managing charging and discharging processes. The invention's capabilities extend to enhar operational efficiency, reducing maintenance costs, and supporting the integration of EVs into smart city infrastructures and renewable energy systems. This AI-powe addresses key challenges in the EV industry, contributing to the broader goals of sustainable transportation and environmental stewardship.

Complete Specification

Description:The field of invention for the proposed AI-powered battery drain prediction and optimization system for electric vehicles encompasses the integration c artificial intelligence and machine learning for advanced data analysis, electric vehicle technology focusing on battery management and efficiency, and energy optin techniques. This interdisciplinary approach aims to enhance the performance and lifespan of EV batteries, contributing significantly to the fields of sustainable transportation and smart energy management.

Background of the invention:

The background of the invention for an artificial intelligence-powered battery drain prediction and optimization system for electric vehicles (EVs) is rooted in the gro need to address the challenges faced by the EV industry, particularly in terms of battery performance and efficiency. As the world shifts towards sustainable transpo electric vehicles have become increasingly prominent. However, a key concern for EV users is the 'range anxiety' associated with the uncertainty of battery life and t availability of charging stations. Traditional battery management systems in EVs primarily rely on static algorithms and historical data, which often do not account fo dynamic nature of driving conditions, environmental factors, and individual driving behaviors.

In response to these challenges, the integration of artificial intelligence and machine learning presents a revolutionary approach. AI and ML algorithms are capable analyzing complex, multi-dimensional data sets, making them ideal for predicting battery performance in real-time. These algorithms can learn from a myriad of fac such as driving patterns, traffic conditions, weather, and even the battery's aging characteristics. By doing so, they can predict how these factors collectively impact drain, enabling more accurate estimations of remaining range.

Moreover, this AI-driven approach can optimize battery usage by recommending the most efficient driving behaviors and routes, and managing battery charging an

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