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Patent Search

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Abstract:

A system and method for energy management in hybrid electric vehicles (HEVs) utilizing the combined capabilities of deep learning and cloud computing. The inventi the vehicle's energy optimization, leveraging real-time data processing and adaptive strategies. It facilitates HEVs to efficiently transition between energy sources base learned experiences, real-time conditions, and shared cloud-based insights. The system also integrates predictive maintenance, V2V, V2I communications, and user fe paving the way for intelligent and sustainable transportation.

Complete Specification

Description:The present invention relates generally to the management of energy in hybrid electric vehicles (HEVs). More specifically, the invention pertains to a sys method that employs deep learning techniques and cloud computing to optimize energy consumption, improve the efficiency of energy storage, and enhance the c performance of HEVs. This innovation addresses the challenges faced by the rapidly evolving HEV domain, offering a novel approach to leveraging computational intelligence for real-time and predictive energy management in vehicles.

Background of the invention:

In the evolving landscape of transportation, hybrid electric vehicles (HEVs) have emerged as a promising solution to reduce the environmental impact of convention fuel-powered vehicles. HEVs are designed to utilize a combination of an internal combustion engine and one or more electric motors, harnessing electricity stored i batteries to power the vehicle either solely or in tandem with gasoline or other fuel sources. The fusion of these power sources provides a potential for increased fu efficiency, reduced greenhouse gas emissions, and cost savings for consumers in the long run.

However, as the design and architecture of HEVs become increasingly intricate, so does the challenge of managing their energy resources effectively. The task of en: the optimal balance between the consumption of electric power and fossil fuel, maximizing the lifespan of onboard batteries, and minimizing wear and tear on the requires sophisticated systems. Traditional rule-based energy management systems, which rely on fixed sets of parameters, struggle to adapt to the myriad of drivi conditions and external factors that can influence an HEV's performance. For instance, fluctuations in terrain, varying traffic conditions, and unpredictable driver be can drastically change the energy requirements of the vehicle. As such, the static nature of rule-based systems leaves much to be desired in terms of adaptability ar efficiency.

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