Perspective

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Optimized Energy Consumption and Reduced Pollution and Emissions of Greenhouse Gases

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Description

Through the wireless network, Internet of Things devices can offload some tasks to edge servers, reducing computing load and energy consumption. In any case, this will build the expense of correspondence. It is essential to maintain a balance between experimentation and the energy required for task execution when developing the offloading strategy for the Internet of Things' edge computing scenario. As a result, the offloading strategy discussed in this paper can simultaneously reduce task execution time and energy consumption. This tactic accommodates a variety of user preferences. The smart grid is a relatively new field in which computer systems provide intelligence. Edge Computing may reduce latency issues by processing data close to the SG information source. Only nine works use context awareness, which may point the way for future SG advancements. The Internet of Things makes it possible for various smart environment objects to communicate with one another without the need for humans. The internet of medical things, or IoT, has recently launched a new threat in the healthcare industry. It is demonstrated that mobile edge computing-enabled 5G systems can successfully overcome this challenge.

Machine's Performance under Varying Operating Conditions

On the basis of this concept, numerous frameworks are presented in the literature. MEC-based IoMT healthcare systems are discussed in detail in this paper. Edge computing is recognized as a method for empowering the Internet of Things with AI due to the devices' limited battery life and processing power. We propose reducing the bandwidth needed because multiple AI model inference tasks typically use the same stream of sensory data. This preserves the ability of edge computing servers to reconstruct data into its original form. It uses neural networks whose training is driven by AI inference tasks to encode and decode sensory data in order to reduce bandwidth consumption and latency without compromising AI inference tasks' accuracy. TORC can also adapt to variations in the bandwidth budget and the temporally dynamic importance of AI inference tasks without having to train multiple neural networks for each setting because it takes into account the IoT's mobility and changes in the environment. One of the renewable energy sources that have the potential to play a crucial role in meeting the global energy demand is hydropower. However, silt erosion and cavitation issues have a significant impact on the hydro turbine's performance, lowering the plant's overall efficiency. The issues of silt erosion and cavitation in hydro turbines are the subject of numerous studies that can be found in the literature. Under part load and overload operating conditions, it has been reported that cavitation and silt erosion vary with discharge variation. However, there are very few studies that can predict the machine's performance under varying operating conditions. Since it is difficult to predict the machine's behaviour using existing models, there is a need for research into real-time monitoring of performance under these conditions. The architecture of a data-driven IoT-based cloud computing-enabled hydropower plant monitoring system has been proposed as part of the current study in light of the aforementioned points.

Literature on Improving the Energy Efficiency of Smart City Equipment

A novel solar photovoltaic energy harvesting system using a doubler rectifier driven by a partial resonant inverter is presented in this article for charging the high voltage battery of an electric vehicle. In the coming years, the scientific community and society will have to deal with the important issue of energy efficiency. The development of energy-efficient buildings and efficient energy resource management in critical locations, such as tourist destinations, has emerged as a pressing issue that requires the attention of governments and environmental scientists all over the world. The primary objective is to reduce energy consumption's impact on the environment. The Internet of Things and cloud computing are two other cutting-edge technologies that are currently supporting smart city activities. This study aims to provide a systematic and bibliographic overview of the literature on improving the energy efficiency of smart city equipment due to the lack of comprehensive research in this area. The majority of publications in this field have been

published in locations listed on this page. It offers a novel, accurate, and comprehensive review of the existing literature on improving the energy efficiency of smart city components. In this area, the application of computational optimization algorithms also opens up new perspectives regarding energy efficiency. The findings demonstrated that these algorithms have successfully optimized energy consumption while simultaneously reducing pollution and greenhouse gas emissions.