Energy efficiency in iot devices

Energy efficiency in iot devices

This research tackles the problems of energy efficiency in the IoT environment, ...

In IoT systems, energy consumption is a key concern due to the proliferation of ...

One highly debated topic in the energy sector is environmental sustainability and how organizations and individuals can minimize the effects that human activities have on the environment.

Much of the debate focuses on the generation, transmission and distribution of electrical energy. Even with greater adoption of power electronics -- the core of renewable generation technologies, such as solar panels and wind turbines -- organizations and individuals can still do more to protect the environment through the use of IoT devices and data analysis.

Organizations can deploy IoT sensors throughout a building and have them send real-time data on energy consumption back to a data center for analysis. With IoT, organizations can individually monitor major devices, such as machinery, air conditioning systems, water heating systems, large refrigerating units or lighting systems. Once enough data is collected centrally over time, AI algorithms can analyze the IoT data and develop historic trends.

The massive amount of IoT data collected and analyzed can be used to strategize ways to conserve energy. Real-time data can show outlier trends in energy use by major systems, which could be a clear indicator of faulty or failing equipment. Organizations can use this data to initiate quick maintenance and avoid long periods of energy waste by faulty or aging equipment. By examining the trends in energy consumption throughout a building, facility managers can identify target areas within the building that can use retrofits to improve energy use.

Two types of IoT sensors in particular monitor and respond to changing needs of building occupants: smart thermostats and lighting systems.

IoT smart thermostats are an effective means of reducing heating and cooling costs. Many modern IoT smart thermostats have greater functionality for better temperature control, which can lead to even greater energy savings. IoT sensors can learn through data how to adjust the temperature based on habits and according to occupancy. Monthly energy reports can show trends of use for greater visibility and understanding of patterns. Reports can offer insight for more granular control of vents and temperature zones.

Another example of using IoT for energy efficiency is with smart lighting systems, where Wi-Fi-enabled LED lights -- which in and of themselves offer great energy savings -- can be controlled based on schedules, motion or sound to turn on and off as needed and avoid excessive lighting energy use.

Energy efficiency in iot devices

Often, rooms in homes and office buildings or commercial facilities remain lit all day even if there is nobody present, and this creates a significant waste of electricity. With IoT lighting systems, businesses or individuals can take advantage of more efficient lighting technologies and use the programmable abilities of smart lighting to streamline the amount of time lights are on. The significant energy savings achieved positively impacts both a business"s bottom line and the environment.

Depending on the geographic region and the type of contract a business has in place with the local electricity distributor, it is likely the price of electricity varies depending on the time of day and the season of the year. For example, electricity is typically most expensive during peak hours on a hot summer day, when demand for electricity on the grid is the highest. IoT devices can reduce a building"s usage and cost of electricity during peak hours in one of two ways, or both:

4 ways to reduce network power consumption

Contact us for free full report

Web: https://www.kary.com.pl/contact-us/
Email: energystorage2000@gmail.com
WhatsApp: 8613816583346