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Wireless Notice Board Using IoT

Abstract

The Wireless Notice Board using IoT is a smart communication system designed to display notices and messages electronically through the internet. The main objective of this project is to replace traditional paper-based notice boards with a digital and wireless system. In this project, a microcontroller such as Arduino or NodeMCU is connected to an LCD/LED display and Wi-Fi network. Messages are sent from a mobile phone or web application through the internet and are instantly displayed on the notice board.

The system provides fast, reliable, and remote communication without the need for manual updating of notices. It helps save time, paper, and human effort while ensuring quick information delivery. This project can be widely used in schools, colleges, offices, hospitals,
railway stations, and other public places for displaying announcements and important information. The Wireless Notice Board using IoT is cost-effective, easy to operate, and supports real-time message updates, making it an efficient modern communication solution.

Comparative Evaluation of Control Techniques of PMSM Drive in Automotive Application

Ms. A.V.Tidke
Asst. Prof. DoEE

Abstract

Permanent Magnet Synchronous Motor (PMSM) drives are widely used in automotive applications due to their high efficiency, fast response, and compact size. This paper presents a comparative analysis of different control techniques such as Field Oriented Control (FOC), Direct Torque Control (DTC), and the proposed Space Vector Modulated Direct Torque Control (SVM-DTC) with LC-Snubber circuit for PMSM drives. The performance of these techniques is evaluated using MATLAB/Simulink in terms of speed response, torque ripple, and current ripple. Conventional DTC provides fast dynamic response but suffers from high torque and flux ripples. To overcome these drawbacks, the proposed SVM-DTC with LC-Snubber circuit is implemented to improve switching performance and reduce torque fluctuations. Simulation results demonstrate that the proposed method offers better dynamic characteristics, reduced ripple content, and improved overall performance compared to conventional FOC and DTC techniques. Hence, the proposed control strategy is suitable for high-performance automotive drive applications.

Parth Rajendra Ahirrao
Sy.B.tech - Electrical

Electric Vehicle: A Sustainable Future

Abstract

Electric Vehicles (EVs) are rapidly reshaping transportation, the landscape of offering a sustainable alternative to traditional internal combustion engine vehicles. This paper presentation explores the components, advantages, challenges, and prospects of EVs. Beginning with an overview of EV components and their working principles, we delve into the environmental and economic benefits of EV adoption, alongside the inherent challenges such as limited range and charging infrastructure. Examining the current trends and market landscape, we observe a surge in global EV sales driven by environmental concerns and government incentives, alongside significant investments from industry players in EV technology and infrastructure. Looking forward, we anticipate technological advancements leading to longer ranges, faster charging times, and greater market penetration. Policy support and integration with renewable energy sources are poised to further accelerate the adoption of EVs, promising a cleaner, greener future for transportation

Charge Anywhere

Harshikesh Mahendrasing Janakwar
Sy.B.tech - Electrical

Abstract

This project presents the development of an autonomous fire-fighting robot designed to detect, approach, and extinguish small fires without human Intervention. The system is built on an Arduino microcontroller that integrates flame sensors for fire detection, a motor driver for mobility control, and a servo-actuated water pump for targeted extinguishing. When a flame is detected, the robot calculates its direction, navigates toward the source, and activates the suppression mechanism to douse the fire. The compact design, low cost, and autonomous operation make this prototype a promising solution for fire safety in homes, laboratories, and small scale industrial setups. Additionally, the project demonstrates practical applications of robotics, sensor integration, and embedded systems in hazard mitigation, offering scope for further enhancement with wireless monitoring, obstacle avoidance, and IoT-based control.

The Silent Consumer of Modern Electricity

Kritika Pavan Korimutha
Sy.B.tech - Electrical

Abstract

Standby power, also known as phantom load, refers to the electricity consumed by electrical and electronic devices even when they appear to be switched off. In modern households and workplaces, devices such as televisions, chargers, Wi-Fi routers, microwave ovens, and gaming consoles continuously consume small amounts of electricity to maintain functions like remote sensing, connectivity, and digital displays. Although the energy consumed by a single device is minimal, the combined effect across millions of users results in significant electricity wastage, increased energy demand, and higher carbon emissions. This article highlights the hidden impact of standby power on energy efficiency and environmental sustainability. It also discusses simple and practical methods to reduce unnecessary electricity consumption, including unplugging unused devices, switching off power sources completely, and using smart power strips. The study emphasizes that awareness of small daily energy losses can contribute greatly toward sustainable energy management and responsible electricity usage.

The Future of Solar Maintenance: An AI-Driven Approach to Clean Energy Efficiency

Rushikesh Kishor Mahajan
Sy.B.tech - Electrical

Abstract

Solar energy is one of our most promising tools for a sustainable future, but it has a silent enemy: dust. Even a thin layer of grime can significantly drop a solar panel's power output, yet traditional cleaning methods are often wasteful, expensive, or performed at the wrong time. This project introduces a smart, autonomous robot designed to solve the "soiling" problem through intelligent intervention.

What sets this system apart is its brain. Instead of cleaning on a blind schedule, the robot uses an AI-based scanning technology to monitor panels in real-time. By analyzing data on a daily, monthly, and yearly basis, the AI learns the specific environment of the solar array and decides exactly when a cleaning cycle is necessary. It doesn't just clean; it thinks before it acts.

Built with a focus on sustainability, the robot is engineered to be highly energy-efficient and requires very little maintenance. By only operating when the panels actually need it, the system saves water, reduces mechanical wear, and ensures the solar installation is always performing at its peak. This project represents a shift toward truly "smart" renewable energy—where AI and robotics work together to keep our transition to green energy as efficient as possible.

Sarang Ahire
Sy.B.tech - Electrical

AIIMS Ransomware Attack (2022): A Case Study

Abstract

With the rapid growth of digital technology, cyber threats like ransomware attacks have increased significantly. The ransomware attack on AIIMS Delhi in November 2022 is one of the most serious cyber incidents in India's healthcare sector. This research paper examines the attack, its causes, impact, response, and preventive measures. The case highlights the urgent need for strong cybersecurity systems to protect sensitive data.

In today's digital era, healthcare institutions depend heavily on technology to store and manage patient data. Hospitals maintain electronic health records, billing systems, and appointment services. While digital systems improve efficiency, they also increase the risk of cyber attacks.

AIIMS (All India Institute of Medical Sciences), Delhi is one of India's top government hospitals. It handles thousands of patients daily and stores large amounts of sensitive information. In November 2022, AIIMS faced a ransomware attack that disrupted its operations. This incident revealed serious weaknesses in cybersecurity and raised concerns about data protection in critical sectors