Machine Learning Strategies for Smart Microgrids

This study presents a comprehensive review of recent advancements in integrating machine learning (ML) techniques into microgrid management systems, focusing on enhancing ...

Concurrently, machine learning applications to smart grids have received significant attention in recent years. This Trending Technologies explores the dynamic intersection of the two technologies: ...

Our model demonstrated significantly lower error metrics compared to traditional linear regression models, achieving a Mean Squared Error of 2.002 for solar PV and 3.059 for wind power forecasting.

Effective energy management in microgrids is essential for integrating renewable energy sources and maintaining operational stability. Machine learning (ML) techniques offer significant ...

This study extends existing research by integrating a multi-algorithm approach, using SVM-based machine learning models with high accuracy (R-squared 0.97, RMSE 0.033) and real ...

The primary goals are to optimize energy management, control techniques, and AI applications in microgrids. The study critically examines the classification of energy management ...

Abstract This research proposal presents a comprehensive framework for developing AI-enhanced Internet of Things (IoT) systems to optimize predictive maintenance strategies and ...

AI facilitates real-time decision-making and adaptive control through intelligent data-driven approaches, thereby improving microgrid efficiency and resilience.

AI-driven solutions, particularly DRL, provide adaptive, autonomous, and data-driven mechanisms for real-time decision-making and predictive control within microgrids.

This paper explores the use of advanced machine learning algorithms, specifically Support Vector Regression (SVR), to enhance the efficiency and reliability of these systems.

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