

Artificial Intelligence and Machine Learning

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Abstract: Artificial intelligence (AI) and machine learning (ML) are transformative technologies with the potential to revolutionize various industries. In India, where renewable energy adoption is a critical goal, AI and ML have emerged as essential tools for optimizing energy production, distribution, and consumption. This paper explores the integration of AI and ML in the renewable energy sector, highlighting their applications in forecasting, grid management, energy storage, and policy development. It also delves into the specific challenges and opportunities in the Indian context, focusing on scalability, affordability, and inclusivity. A review of existing literature, followed by a discussion of methodologies and findings, provides actionable insights into the future of AI-driven renewable energy management in India. Additionally, the paper underscores the importance of regional adaptability and collaborative frameworks to ensure the seamless integration of AI technologies into India's unique energy landscape.

Keywords: Artificial intelligence.