

Machine Learning Approaches for Climate Modeling

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Abstract. This research investigates the application of machine learning techniques in climate science, aiming to improve the accuracy of climate models. By integrating large datasets and learning algorithms, the study enhances predictions of climate patterns and anomalies. The methodology provides a scalable solution that adapts to evolving data inputs, demonstrating improved model performance over traditional methods. The findings highlight the potential of AI-driven models in advancing climate research.

Keywords: Machine Learning, Climate Modeling, AI, Data Integration, Predictive Analytics

Introduction

Climate modeling is crucial for understanding future environmental changes, but existing models often struggle with accuracy and adaptability. This paper explores the integration of machine learning approaches to address these challenges. By leveraging large datasets and sophisticated algorithms, the research aims to refine climate predictions and detect anomalies more effectively. The proposed models are designed to scale with data, offering flexibility and improved performance compared to traditional techniques. Preliminary results indicate a marked improvement in predictive capabilities, underscoring the value of AI in climate science.

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References

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