

RESEARCH ARTICLE

Deep Learning Approaches for Real-Time Climate Change Prediction Models

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Abstract:

This study presents novel deep learning architectures for real-time climate change prediction. We propose a hybrid transformer-LSTM model that integrates satellite imagery, atmospheric sensor data, and historical climate records to generate accurate short-term and long-term climate forecasts. Our model achieves a 23% improvement in prediction accuracy compared to existing methods, with particular strength in extreme weather event forecasting. The findings have significant implications for disaster preparedness and environmental policy planning.

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