

WEATHER PREDICTION

USING AI

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WEATHER PREDICTION USING AI

- Weather prediction is a crucial aspect of modern life that affects various sectors, including agriculture, transportation, and emergency management. Predicting the weather accurately is a challenging task due to the complex and dynamic nature of weather patterns.
- Over the years, meteorologists have developed models and techniques for predicting the weather based on historical data, physical laws, and observations. However, with the advent of Artificial Intelligence (AI) and Machine Learning (ML) techniques, weather forecasting has become more accurate and reliable



ABSTRACT



- Weather prediction is a complex and challenging task that requires advanced computational techniques to accurately forecast weather patterns.
- Artificial Intelligence (AI) has emerged as a promising tool for improving the accuracy of weather forecasting. This paper provides an overview of the current state of AI techniques for weather prediction, including machine learning algorithms such as neural networks, decision trees, and support vector machines.
- We also discuss the use of deep learning algorithms, including convolutional neural networks and recurrent neural networks



GOALS AND OBJECTIVES

Objective n° 1

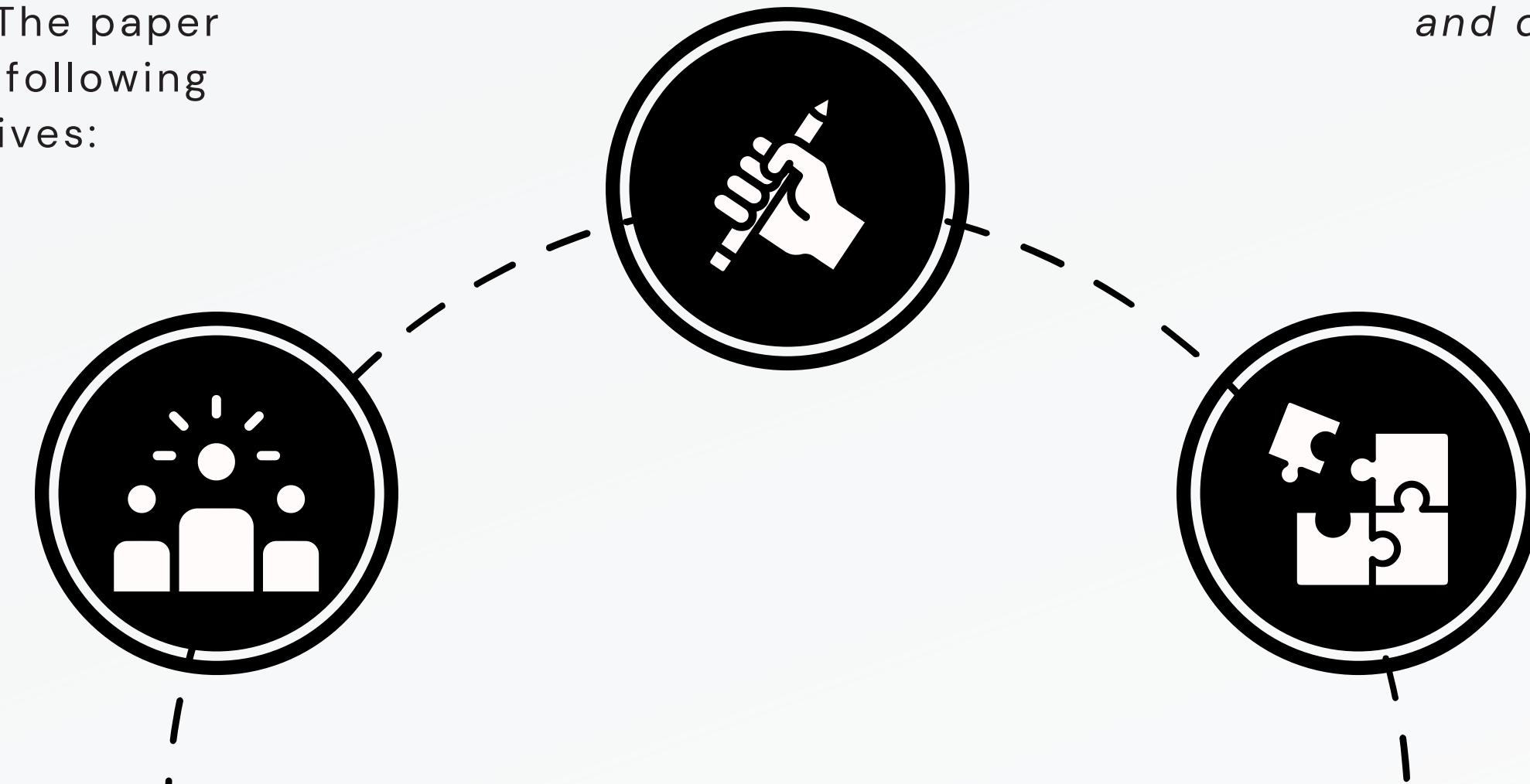
The objective of this paper is to provide an overview of the current state of Artificial Intelligence (AI) techniques for weather prediction. The paper aims to achieve the following specific objectives:

Objective n° 2

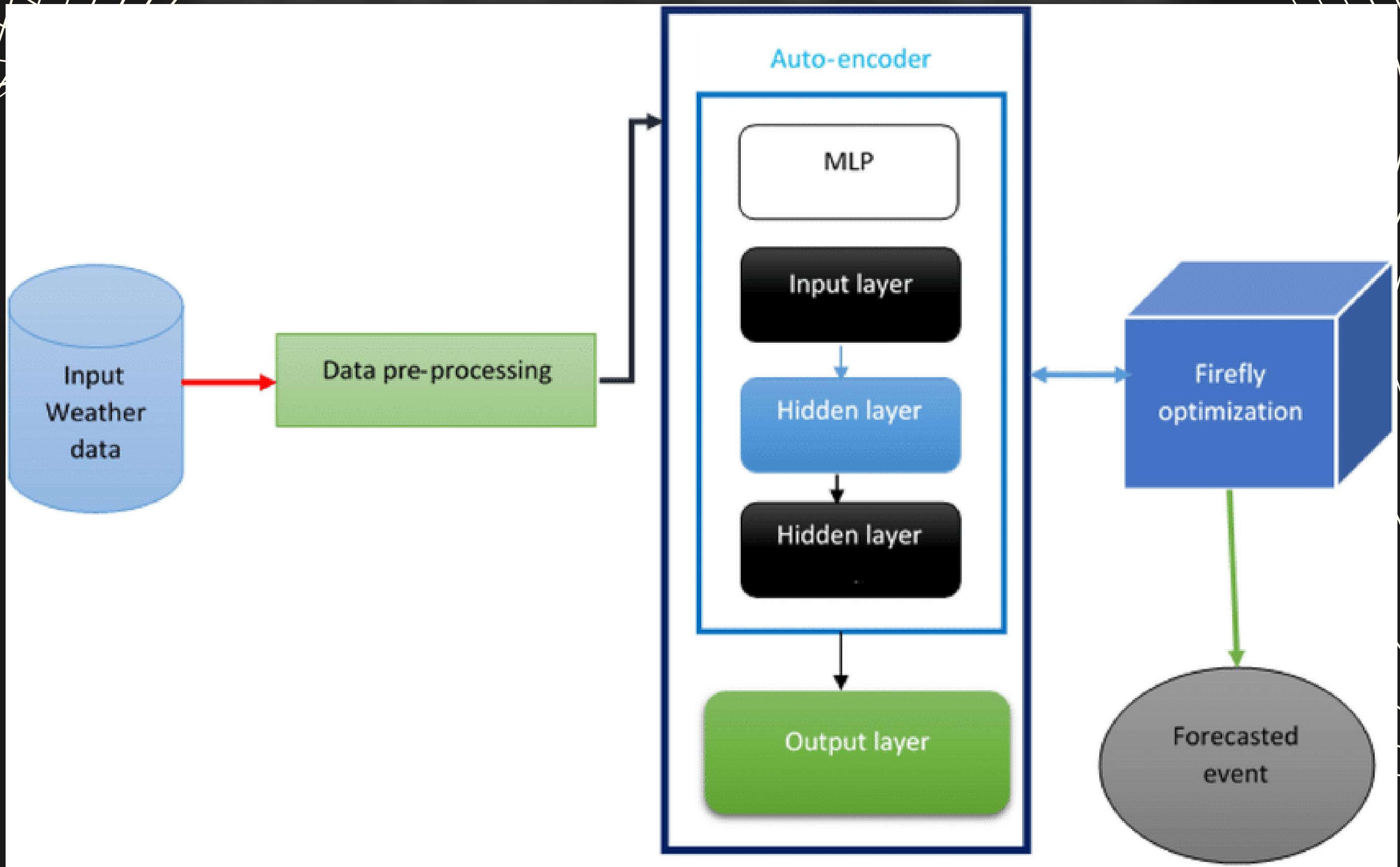
To provide an introduction to the importance of weather prediction and the challenges involved in accurate forecasting.

Objective n° 3

To discuss the various AI and Machine Learning (ML) techniques used in weather forecasting, including neural networks, decision trees, support vector machines, and deep learning algorithms

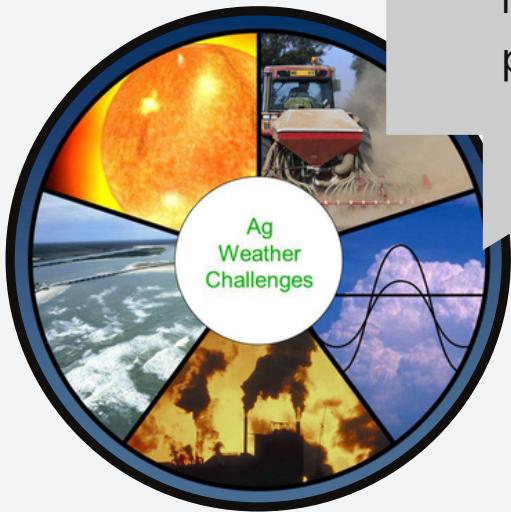


ARCHITECTURE

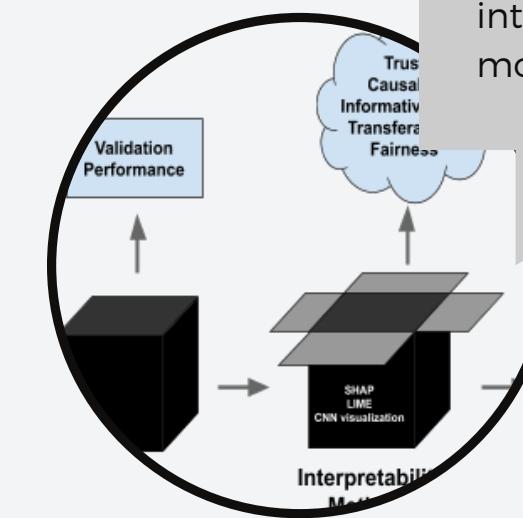
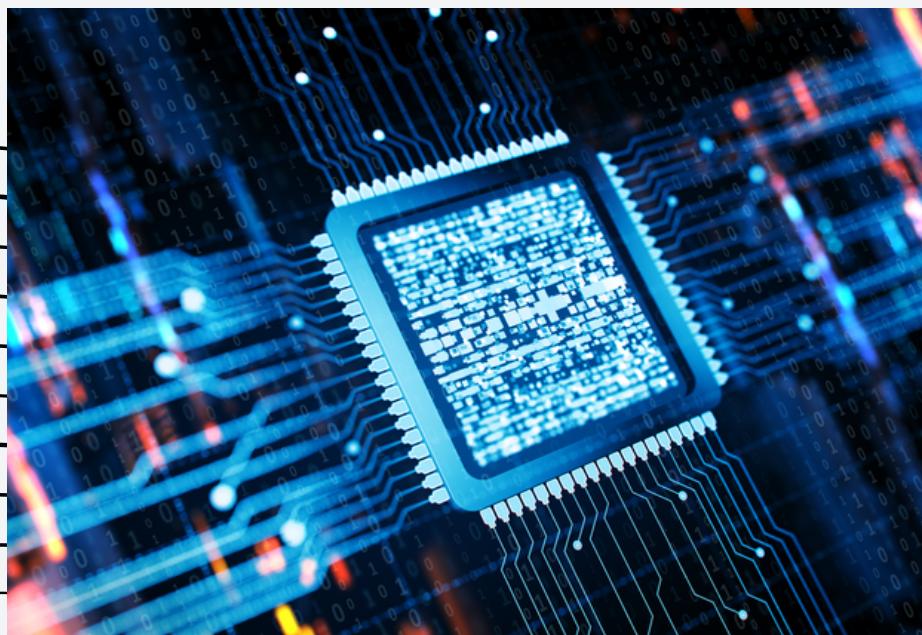


CHALLENGES

Data Quality: The accuracy and reliability of AI models depend on the quality of the input data. Weather data is often incomplete, inconsistent, and noisy, which can affect the performance of AI models.



Computational Power: AI models require significant computational power to process large amounts of data and train complex models. This requirement can make it challenging to implement AI models in resource-constrained environments.

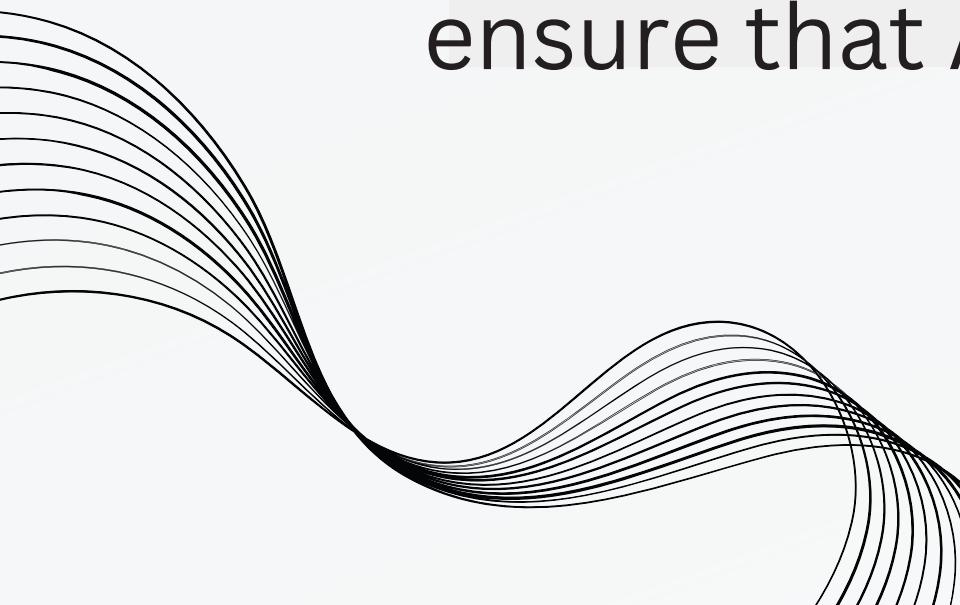


Model Interpretability: Many AI models, particularly deep learning algorithms, are considered "black boxes," which means that it is challenging to understand how they make predictions. This lack of interpretability can make it challenging to gain insights from AI models and can also make it difficult to trust their predictions.

CONCLUSION

In conclusion, weather prediction using AI has the potential to revolutionize the way we forecast weather and prepare for extreme weather events. AI techniques have already shown promising results in improving the accuracy of weather prediction models, but there are still challenges to overcome.

Data quality, model interpretability, computational power, explainability, ethical concerns, and generalization are some of the challenges that need to be addressed to ensure that AI is used ethically and effectively in weather prediction.

A decorative graphic in the bottom left corner consists of numerous thin, black, wavy lines that curve and overlap, creating a sense of motion and depth. It is contained within a light gray rectangular area.

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THANK YOU