

15.ANALYZING CLIMATE CHANGE DATA TO FORECAST FUTURE WEATHER PATTERNS

Dr Joy Winnie Wise.D.C(Dean)
Department of Computer Science and Engineering
Rajalakshmi Institute of Technology Chennai,India

Kartheesh.N.R.K(Student)
Department of Computer Science and Engineering
Rajalakshmi Institute of Technology Chennai, India

Padmapriya.A(Student)
Department of Computer Science and Engineering
Rajalakshmi Institute of Technology Chennai, India

Predicting weather is one of the biggest challenges faced by meteorological departments across the globe. Weather forecasting is so important for our daily use, it affects a lot of systems such as: transportation, agriculture, energy use, disaster management, overall economic system etc. From agriculture to disaster management, accurate weather predictions can help decision-makers to make informed choices. Until now, weather forecasts have been vital for numerous industries. Also, weather forecasting is the first line of defense against natural calamities such as hurricanes, cyclones, floods and heat waves. Early and accurate prediction allows authorities to take necessary precautions, minimizing loss of life and property. As such, better forecasting in disaster-prone regions can be the difference between life and death. Furthermore, accurate predictions reduce resource waste by informing preparation and response strategies. Yet the complex nature of weather systems, which depend on a variety of atmospheric factors, makes accurate forecasting challenging. Meteorological data is produced at high rates, which needs efficient computational techniques and big data analytics to make any fruitful sense of it. The use of data-driven approaches, particularly with the advent of machine learning and artificial intelligence, has also become numerous in improving forecast accuracy. This research work attempts to explore and compare different algorithms for processing large-scale meteorological data to improve weather predictions.