



A Synopsis
for
Time Series Weather data Prediction and Forcasting

Submitted in partial fulfillment of the requirement

for award of the degree of

BACHELOR OF TECHNOLOGY

in

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(Artificial Intelligence)

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DECLARATION

We hereby declare that the synopsis of project entitled “**Time Series Prediction and Forecasting**” to be submitted for the Degree of **Bachelor Of Technology in Computer Science and Engineering (Artificial Intelligence and Machine Learning)** is our original work and the synopsis has not been submitted for the award of any degree, diploma, or fellowship of similar other titles in previous work. It has not been submitted to any other University or Institution for the award of any degree or diploma.

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Chapter 1

Introduction

Time series prediction and forecasting play a pivotal role in understanding and anticipating the dynamic behavior of various phenomena, including weather patterns. In the case of Delhi, India, where the climate can vary significantly throughout the year, accurate forecasting of weather conditions is essential for various sectors, including agriculture, transportation, and urban planning. Leveraging historical weather data collected over time, predictive models can be developed to forecast temperature, precipitation, humidity, and other meteorological variables. Such forecasts not only aid in planning daily activities but also contribute to mitigating risks associated with extreme weather events, thereby enhancing resilience and preparedness.

1.1 Problem Statement

Despite advancements in meteorological science and technology, accurate forecasting of weather conditions in Delhi remains a challenge due to the region's complex climate dynamics influenced by various factors such as seasonal monsoons, urbanization, and global climate change. The need for reliable time series prediction models tailored to Delhi's specific weather patterns is evident. This project aims to address this need by developing robust predictive models capable of forecasting key weather parameters with high accuracy and precision. By analyzing historical weather data for Delhi and employing advanced machine learning algorithms and statistical techniques, this research seeks to enhance the reliability of weather forecasts, thereby facilitating informed decision-making and resource allocation for stakeholders across various sectors.

Chapter 2

Review of Literature