Time Series Project

Abstract

1. Introduction

The subject of global warming and climate change is gradually becoming one of the challenges that the world must face. More frequent and intense extreme weather events, such as heat waves, dust storms and floods, have been observed all over the world [1]. The issue of climate change has become particularly important in large, densely populated cities. An example is Delhi, India. The effects of climate change have intensified in recent years, posing challenges to human health, agricultural production and the environment [2]. Therefore, it is of high scientific value and practical significance to study the temperature trends in Delhi. The study will use time series analysis. Time series analysis enables the analysis of historical temperature data, comparing the performance of different time series model fits, and ultimately predicting future temperature trends using the best-fit model. This study will provide a more comprehensive understanding of temperature trends in the Delhi region and help meteorological researchers and policy makers with scientific evidence and data support. This will ultimately improve the accuracy of climate forecasting and decision making.

1. Data

This research project report uses the dataset from the machine learning community Kaggle and the data content is mainly about the climate data from January 1, 2013, to April 24, 2017, for the city of Delhi, India. Each record in the dataset represents a single day's measurements. The data mainly contains four parameters: mean temperature, humidity, wind speed and mean pressure. This study will focus on the parameter of mean temperature.

Reference

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   URL: <https://ieeexplore-ieee-org.ezproxy.tru.ca/stamp/stamp.jsp?tp=&arnumber=9680663&isnumber=9680605>
2. Hussain S, Hussain E, Saxena P, Sharma A, Thathola P, Sonwani S. Navigating the impact of climate change in India: a perspective on climate action (SDG13) and sustainable cities and communities (SDG11). Frontiers in Sustainable Cities [Internet]. 2024 Jan 23 [cited 2024 Nov 29];1–22. Available from: <https://research-ebsco-com.ezproxy.tru.ca/linkprocessor/plink?id=6c6991da-78bd-3062-a586-5a5d83ba7467>