

Project Report
On
Weather Forecast

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.ABSTRACT

Weather prediction is the application of science and technology to predict the state of the atmosphere for a given location. Here this system will predict weather based on parameters such as temperature, humidity and wind. This system is a web application with effective graphical user interface. To predict the future's weather condition, the variation in the conditions in past years must be utilized. The probability that it will match within the span of adjacent fortnight of previous year is very high .We have proposed the use of linear regression for weather prediction system with parameters such as temperature, humidity and wind. It will predict weather based on previous record therefore this prediction will prove reliable. This system can be used in Air Traffic, Marine, Agriculture, Forestry, Military, and Navy etc.

Introduction

Weather forecasting is the task of predicting the state of the atmosphere at a future time and a specified location.

Traditionally, this has been done through physical simulations in which the atmosphere is modeled as a fluid. The present state of the atmosphere is sampled, and the future state is computed by numerically solving the equations of fluid dynamics and thermodynamics. However, the system of ordinary differential equations that govern this physical model is unstable under perturbations, and uncertainties in the initial measurements of the atmospheric conditions and an incomplete understanding of complex atmospheric processes restrict the extent of accurate weather forecasting to a 10-day period, beyond which weather forecasts are significantly unreliable.

Weather Scope

- Weather forecasts are made by collecting as much data as possible about the current state of the atmosphere (particularly the temperature, humidity and wind) to determine how the atmosphere evolves in the future.
- However, the chaotic nature of the atmosphere makes the forecasts less accurate as the range of the forecast increases.
- Traditional observations made at the surface of atmospheric pressure, temperature, wind speed, wind direction, humidity, and precipitation are collected routinely from trained observers, automatic weather stations or buoys. During the data assimilation process, information gained from the observations is used In conjunction with a numerical model's most recent forecast for the time that observations were made to produce the meteorological analysis. The complicated equations which govern how the state of fluid changes with time require supercomputers to solve them.
- The output from this model can be used the weather forecast as alternative

Problem Statement

Weather prediction is a useful tool for informing populations of expected weather conditions. Weather prediction is a complex topic and poses significant variation in practice. We will attempt to understand and implement a weather prediction application using the linear regression.

Conclusion

That's how easy it is! You now have your personal terminal-based weather station using Python. Experiment with the output to see what you can do with it. Maybe even create a weather-forecasting website for yourself! Let us know what you did with the outputs you receive here.

Reference

- <https://www.askpython.com/python/examples/weather-forecast-using-python>
- <https://www.studocu.com/in/document/integral-university/bachelors-of-computer-application/435643484-project-report/39785136>