

Analysis of the DS Technique in Climate Prediction using Data Mining

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Abstract - It is no surprise that, from the very beginning of time climate and weather conditions of any geography has been one of the many vital factors that have a formidable influence over human life and its related aspects. To begin with it is important to appreciate the various areas that are visibly affected by climate change and weather conditions. Agriculture, business etc are some of the major sectors where climatic conditions sure play a vital role. Agriculture among these is still one of the most primitive yet basic activities that have supported the human civilization for thousands of years now and hugely rely on the availability of water, temperature and humidity. Thus, one can easily say that the success or failure of cultivation of crops in certain geography is directly determined by natural conditions like climate and weather conditions etc. apart from this, the climate changes are also known to influence the human life in ways that have become interesting research topics for scientists over the years.

Keywords – DS Algorithm, Climate Prediction, Data Mining

I. INTRODUCTION

As computers, sensors and data transfer channels spread over time; there is an expanding surge of raw data. Notwithstanding, the data is of little value, unless it is investigated and analyzed because of the inherent raw nature of the data. Fundamentally speaking, this is where the whole exercise of analysis and prediction using techniques that have been developed keeping in mind the capability to handle huge amount of data, like data mining techniques, come into practice.

II. PROPOSED ALGORITHM

A. *Generic Approach to Climate Prediction using Data Mining* –

The various data mining techniques that are commonly used for such purpose involve what can be called as the process of correlating raw data or normalized data among the various data fields available in a database. This leads the researcher to discover the various patterns and co-relations that might have otherwise escaped. The various functions where the data mining techniques find most of their utility is clustering, classification, regression and association rule learning. Association rule learning is of special importance when it comes to prediction and similar applications. Apart from this, data mining techniques have found applications in radio diagnosis for tumors, medical applications and several other vital uses.

The most recent couple of years show colossal accomplishments in this field. All frameworks and strategies grew in this way; utilize the Sea Surface Temperature (SST) as the principle element, among other regular climatic properties. Measurable and numerical models are then utilized for further atmosphere forecasts. In the scope of this particular study on the decision support system, the regression tree technique is used to correlate the various elements and predict the climactic conditions and how they would be affecting the vegetation and cultivation of the locale under consideration. Furthermore, the system is fabricated on the basics of artificial neural network, which helps in finding the relationship that exists between sea level pressure and sea surface temperature. As earlier studies suggest, these two factors have played an important role in the long term climactic conditions of a place.

B. Decision Support System –

Decision Support Systems are most often, very sophisticated information systems containing complex information regarding the various environmental parameters that are instrumental for climate prediction and other allied operation. They are also entitled to perform complex workflows that may not even be pre-defined at the time of the conceptualization of the system. This is an evidence to the fact that these systems consists of a number of highly heterogeneous components and tools for solving a complex monitoring, analysis or decision support task.

Although the component structure of such systems cannot really be generalized due to this heterogeneity because real world applications vary considerably depending on the concrete use of a concrete system, however, certain common elements and components those are included in such systems like data management and data network components, geometrics components, decision support components, numerical simulation models etc can be enumerated based on their functions. It must be noted that even in case of stand-alone system for one single purpose, integration of data, models, visualization, analysis tools and decision support tools is often a very difficult and costly undertaking. Hence, such decision support system often finds its utility in log term and vital applications like town planning etc.

III.CONCLUSION

As of now, since the system is its nascent stage, the incorporation of the functionality for predicting and reflecting the global climactic conditions has not been possible, but the system can work efficiently for limited geographical areas. The global climactic conditions, since it is the sum total of a huge pool of attributes and factors that affect it, the enhancement needed for this particular system as well as the data handling capabilities of the system have to be gigantic. The underlying principles although, would remain the same.

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