UNIVERSITI TEKNOLOGI MARA

RAINFALL PREDICTION SYSTEM USING ARTIFICIAL NEURAL NETWORK (ANN)

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ABSTRACT

The Rainfall Prediction System using Artificial Neural Network (ANN) project aimed to develop a model for predicting rainfall based on weather attributes. The background study involved an extensive review of literature, including books, articles, journals, theses, websites, and papers, to explore existing techniques for rainfall prediction. The project identified the need for an accurate and efficient method for predicting rainfall to aid in various applications such as agriculture, water resource management, and disaster preparedness. The problem statement addressed the limitations of current rainfall prediction methods and emphasized the significance of developing a reliable ANN-based model. The objectives of the project were to study the ANN algorithm for rainfall prediction, gather relevant data for training the model, and implement and evaluate the performance of the developed system. The methodology employed a systematic approach, including data collection, pre-processing, prototype architecture design, algorithm implementation, and evaluation. The research utilized the waterfall model, with phases such as preliminary study, data analysis, design and implementation, and evaluation. Key results of the project included the successful implementation of the ANN model for rainfall prediction and the evaluation of its accuracy using different training and testing data splits. The developed system demonstrated promising capabilities in predicting rainfall based on weather attributes, thus offering potential benefits for various sectors reliant on accurate rainfall forecasts. In conclusion, the project provided valuable insights into the application of ANN for rainfall prediction and highlighted the potential for further enhancements and real-world implementation. The findings contribute to the advancement of computer science and offer practical implications for sectors dependent on precise rainfall forecasts.

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