Review of: "Flood Prediction Using Artificial Neural Networks: A Case Study in Temerloh, Pahang"

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The manuscript offers a compelling exploration of artificial neural networks (ANNs) for flood prediction in Temerloh, Pahang, utilizing data from the National Hydrological Network Management System (SPRHiN) alongside meteorological information. The objective is to refine flood prediction methods crucial for disaster management and planning. The findings highlight a strong correlation between hydrological data (stream flow, water level) and flood occurrences, inversely related to temperature, leading to the creation of an ANN model with impressive accuracy and a subsequent flood monitoring dashboard. While the manuscript provides a significant contribution to the domain of flood prediction, further revisions could enhance its clarity, depth, and academic rigor.

1. The manuscript would benefit from an expanded comparison between ANNs and other machine learning techniques in flood prediction, emphasizing the distinct advantages of ANNs in this context.

2. A discussion on the challenges encountered in previous studies and the ways this research addresses those limitations would enrich the manuscript.

3. A detailed description of the ANN architecture, including the number of layers and the types of activation functions used, would offer valuable insights into the model complexity and design rationale.

4. Clarification on the selection criteria for the dataset time range (2021-2022) and its implications for the model applicability to other periods or flood events would be helpful.

5. An elaboration on the choice of linear interpolation for handling missing data and its potential impact on the findings would strengthen the manuscript.

6. The manuscript could be improved by discussing any data normalization or standardization techniques applied prior to inputting the data into the ANN model, ensuring consistent data scaling.

7. Justification for the specific choice of metrics (accuracy, recall, precision, F1-score) used for model evaluation would be valuable. The inclusion of any additional metrics that could further validate the model performance is encouraged.

8. An explanation of the rationale behind the training and testing dataset split ratio would be appreciated. Exploring alternative split ratios or cross-validation techniques to evaluate model robustness could provide deeper insights.

9. A more thorough analysis of the correlation coefficients and their relevance to flood prediction would enhance

understanding. Any surprising or counterintuitive findings should be addressed.

10. The manuscript would benefit from a discussion of the model performance, specifically regarding overfitting or underfitting, supported by the learning curve analysis. Recommendations for improvement are welcome.

11. Highlighting the practical applications of the developed flood monitoring dashboard and its potential integration with existing disaster management systems would be of great interest.

12. The manuscript would be further enriched by outlining specific directions for future research, such as applying the model to different geographic regions, incorporating a broader range of data sources, or investigating hybrid models that combine ANNs with other techniques.