

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

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Potential competing interests: No potential competing interests to declare.

The research on flood prediction in Temerloh using machine learning techniques is promising but requires major revisions for clarity and depth. Important aspects such as adapting the model for climate change impacts, addressing robustness against extreme events and data biases, and comparing with alternative algorithms need further elaboration. Additionally, considerations regarding computational resources, interpretability of predictions, usability testing of the Flood Monitoring Dashboard, and extrapolation to other regions are crucial. Strengthening these areas will enhance the study's impact on flood management efforts.

Comments:

1. In light of climate change, how do authors plan to adapt the machine learning model to account for potential shifts in flood patterns and intensities over time?
2. Given the dynamic nature of hydrological systems, how robust is your model in handling extreme events and outlier data points that may not conform to typical patterns?
3. Can authors elaborate on the potential limitations or biases in the data collected from SPRHiN and Weather Underground, and how these may affect the reliability and generalizability of your model's predictions?
4. The study mentions the use of linear interpolation for handling missing data points. How sensitive is the model's performance to the specific imputation methods used, and what alternative techniques were considered?
5. While the ANN model achieved high accuracy, how does its performance compare to other machine learning algorithms commonly used in hydrological forecasting, such as decision trees or support vector machines?
6. Could authors discuss the computational resources required for training and deploying the ANN model, particularly regarding scalability if applied to larger geographic areas or longer time periods?
7. Considering the complexities of flood dynamics, including interactions between various factors, how do authors ensure that the model's predictions are interpretable and actionable for stakeholders involved in flood management and disaster response?
8. The study mentions the development of a Flood Monitoring Dashboard for visualization. How user-friendly is the dashboard, and have authors conducted any user testing or feedback sessions to assess its effectiveness in aiding decision-making processes?
9. Given the emphasis on Pahang in this study, what challenges or differences might arise when extrapolating the model's findings to other regions in Malaysia with distinct geographical and climatic characteristics?
10. In the context of ongoing urbanization and land use changes, how do authors envision incorporating spatial data and

land cover information into future iterations of the model to enhance its predictive capabilities?

11. Lastly, what measures are in place to ensure the long-term sustainability and maintenance of the Flood Monitoring Dashboard, particularly in terms of updating data feeds and addressing potential software or compatibility issues as technology evolves?