Paper Title : Urban flood modeling using deep-learning approaches in Seoul, South Korea
Paper link :

1. Summary

1.1 Motivation

This article's motivation stems from Seoul's growing urban flooding frequency, which makes accurate estimates of flood vulnerability necessary to avert future tragedies.

1.2 Contribution

The article contributes by applying NNETC and NNETR models to identify high flood risk areas in Seoul, providing accurate and rapid results for urban flood management.

1.3 Methodology

The methodology involved utilizing NNETC and NNETR models, incorporating 10 flood-related factors, and overlaying thematic layers with flooded points for mapping flood-prone areas in Seoul. The models were validated and assessed for accuracy using AUC values and RMSE.

1.4 Conclusion

The conclusion highlights that flooding in Seoul is increasing, emphasizing the importance of flood-susceptibility assessment. The NNETC model outperformed the NNETR model, identifying TRI as the most crucial factor in urban flood risk. Both models are recommended for flood management.

2 Limitations

2.1 First Limitation

The study's generalizability may be limited as the efficiency of the models was specifically evaluated for Seoul, and their performance in different urban contexts remains uncertain.

2.2 Second Limitation

The impact of different training and testing datasets on the robustness of the models was not extensively scrutinized, highlighting a potential limitation in understanding the models' sensitivity to varying data inputs.

3 Synthesis

Subsequent investigations may concentrate on optimising flood-susceptibility models in various metropolitan environments outside of Seoul. A better grasp of the models' generalizability would result from examining the effects of various training and testing datasets on model resilience. Furthermore, investigating the NNETC and NNETR models' applicability in different geographic areas would offer insightful information on how versatile they are for managing urban flooding. In order to advance the subject of flood risk assessment and management, future research may

examine the dynamic nature of flood hazards and the incorporation of real-time data for more precise and timely forecasts.