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Natural Hazards and Earth System Sciences
Discussions

Interactive comment on "Online Urban Waterlogging Monitoring Based on Recurrent Neural Network for Classification of Microblogging Text" *by* Hui Liu et al.

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The paper describes how information extracted from micro-blogging platform Weibo can be used to build a model for detecting urban floods. The model was trained using ground truth data merged with social media posts as training dataset and a set of known events have been used as reference for evaluation of the transfer learning potential of the model.

I think the paper is overall clear and well structured. While the work does not present a novelty in terms of technology or methodology, the effort of (i) applying it to a new, according to my knowledge, micro-blog data source with an extensive authoritative

ground truth and (ii) to a specific type of flood, namely urban waterlogging makes the paper interesting for community researchers. The literature review covers widely the related works but is missing some of the most recent developments where similar methodology was applied.

The methodology applied is correct and the results well clarified and documented with clear figures and tables. The authors made the code and data available, which is a much appreciated and very good practice.

General comments - Since the publisher is the European Geoscience Union (EGU) and the audience is expected to have little experience with Weibo, it would be useful to give some more context to non-users of the platform about how the original posts are structured and how the data was extracted in terms of text and location.

- While it is very clear and well explained how the model was trained and the data was prepared, little description of the operational Monitoring of urban waterlogging in real time was provided. The authors could elaborate more on the scalability of their system.

Minor comments L120 It is not clear to me why multiple posts actually located to the same flood deposit were removed. It means posts had same text and locations or different text and same location? in case could you explain better maybe with examples or by stating the relation between positive samples and location. Is it 1 to 1? or many to 1? or many to many? L120 It would be of great help to have the table 1 partially translated and described further, as it has been done in the following paragraph about the selection of negative samples. L210 How the undersampling was achieved? randomly removing posts or is there a methodology applied? L335 At some point the authors introduce the term 'flood deposit' and it seems to be used as an interchangeable term with waterlogging. Since the term is repeated extensively It would be clearer for reader to get the definition in the introduction of the paper when waterlogging is introduced. L300 Why not using an example referring to a flood post? L405 If numbers of events is based on microblogging, could it be that 'new technology adoption' rather than GDP

is a leading factor for bigger orange spots? i.e. there are more waterlogging because the population discuss more about it on weibo? in order to clear such doubt it could be useful to report the number of posts per day in the several areas.

Thanks

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