

Ranking Environmental Problems in Sri Lanka Using Crowdsourcing and Natural Language Processing

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Deforestation, pollution of water bodies, natural disasters are few environmental problems in Sri Lanka. Communities who suffer from environmental problems are not attaining solutions due to lack of awareness and carelessness in agreeable parties. In most influential situations, community uses mass media for gaining responsiveness of authorized parties. Virtual communities in Sri Lanka used social media for emphasizing numerous forms of social problems occurred within last decade. The intention of this research is to assist amenable organizations in making better decisions according to public views.

The application is obtaining the content of environmental problems with crowdsourcing. The virtual community can report environmental problems by using text and images. Users of the application can vote or comment on the problems reported by others. Each problem will receive points according to a pre-defined algorithm based on the number of up or down votes and polarity of user comments they have received. The application highlights genuine high-quality problems while allocating points for each user. Topic based text categorization techniques which used in this prototype is effective for filtering out environmental related information which is not used yet for the most important natural language applications. The polarity of user comments is generated as positive or negative by using sentiment analysis tools.

The application is providing 90% of accuracy in highlighting environmental problems by considering pre-defined user features, user activity measures and community process features. The accuracy of the application can be automatically improved with the growth of corpus provided by the users of the application.

Keywords: *Natural language processing, Text classification, Sentiment analysis, Crowdsourcing*

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