

Incident crowdsourcing, tracking and ranking application for environmental problems and issues in Sri Lanka using natural language processing

M. V. P. T. Lakshika* and S. H. D. Senanayake

*Department of Computer Science & Technology,
Uva Wellassa University, Sri Lanka
lakshikamvpt@gmail.com*

Sri Lanka is having numerous critical environmental problems and issues such as deforestation, pollution of water bodies, natural disasters and many other urban problems. Many of the communities who suffer from such environmental problems are not attaining solutions for their vital problems due to lack of awareness, inefficiency and carelessness of amenable parties such as environmental related authorities and ministries in Sri Lanka. Within past few years, virtual communities in Sri Lanka used social media for emphasizing numerous forms of social problems. The intention of this research is to make the awareness of virtual community as a compulsion towards the responsible parties in Sri Lanka which can work as a driving force for stimulating reasonable solutions towards environmental problems.

The web based application discussed in this research has been designed to obtain content of such environmental problems by soliciting contributions from crowdsourcing. Online community can report environmental problems by using text and images. Users of the application can vote and comment on the problems and issues posted in the application. Each problem will receive points based on up or down votes and comments they have received and then the application ranks genuine high quality environmental problems while allocating points for each user in the system. Text categorization is a subtask of information retrieval which used in this application is very effective for filtering of environmental related information before posting to the system. Further, this application is using the semantic information or the polarity of user comments as positive, negative or neutral which are not used yet for the most important natural language applications.

This research discussed about a study of the interaction between Natural Language Processing and text categorization. Based on users negative or positive comments and up or down votes, the application calculates the points for each post according to a predefined criterion and highlights the genuine high quality environmental problems and issues in Sri Lanka.

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

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