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Personality, Sentiment, and Emotion: The Psychological Features and their Impacts on Cyberbullying Detection using Machine-Learning Techniques

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Boyd GSRC, Room 306

Abstract:

With the emergence of social networking sites, certain people are finding illegal and unethical ways to use these online communities as means for inappropriate online activities, such as cyberbullying. In this study, we deal with cyberbullying detection mechanism based on the user's personality, determined using the Big Five and Dark Triad models, sentiment and emotion. The proposed model aims at the recognition of bullying patterns among the Twitter communities. Random Forest. J48 and Naïve Bayes used for cyberbullying classification (i.e. aggressor, spammer, bully and normal), using a baseline algorithm encompassing seven Twitter features (i.e. number of mentions, number of followers and following, popularity, user favorite count, status count and number of hashtags). Findings indicate the model performed the best when user's personality and sentiments were used. Emotion however did not have any impact on cyberbullying detection. As for the algorithms, J48 emerged to produce the best detection results.

Biography:

Dr. Vimala Balakrishnan is a Senior Lecturer, and Data Scientist affiliated with the Faculty of Computer Science and Information Technology, University of Malaya since 2010. She obtained her PhD in the field of Ergonomics from Multimedia University, whereas her Masters and Bachelor's degrees were from the University of Science Malaysia. Dr. Balakrishnan's main research interests are in data analytics and sentiment analysis, particularly related to social media. Her research domains include healthcare, education and social issues such as cyberbullying. She has published approximately 45 articles in top indexed journals, and she also serves as both an Associate Editor to the Malaysian Journal of Computer Science and as an Associate Member for the Global Science and Technology Forum. She is a fellow for the Leadership in Innovation program, a prestigious award by the Royal Academy of Engineering, UK. She is currently serving as a Fulbright Visiting Scholar at the University of Georgia, USA.