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ARISdetect: Sentiment Analyser to secure online safety for adolescents in social media

A dissertation by

Ms. W. C. M. W. Wickramanayake

Supervised by

Ms. Niwarthana Kariyabadhuge

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Department of Computing

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Abstract

Cyberbullying has become a worldwide phenomenon. Number of victims of cyberbullying is keep increasing from all around the world. At first, negative impact of cyberbullying attacks to the self – esteem of the victim. Then it gradually finds his way up to the number of psychological disorders such as depression, sleep – disorders, anxiety etc. Then one day it will stop his way when victim decides to end up his own life. The worst fact is majority of the victims are adolescents or young adults. Even though cyberbullying has been a critical problem for years, a proper technological solution to identify cyberbullying at its' initial phase has not been identified yet.

ARISdetect proposes a new approach which identifies the negative impact of a text – based post towards the self –esteem of a person. It uses Multinomial Naive Bayes sentiment classifier to identify the impact of a post on social media. If a social media post identified with a negative impact that would be classified as a cyberbullying post while another post with a positive impact would be identified as non – cyberbullying post. Then the cyberbullying post will check with four word lists using a Fuzzy String Matching matrix in order to identify the motive of the bully. In an every cyberbullying scenario bully targets a certain aspect of the victim to initiate the process. ARISdetect only consider the aspects such as Physical Appearance, Race, Sexual Orientation and Intelligence. Fuzzy String Matching matrix generates four values which will be called probability scores. ARISdetect was tested with live data and it achieved an accuracy score of 64% and both parents and victims have praised the system.

Keywords:

Cyberbullying detection, Sentiment classification, Aspect Identification, Fuzzy String Matching