Sarcasm Recognition System Using Hybrid Tone-Word Spotting Audio Mining Technique

Authors : Sandhya Baskaran, Hari Kumar Nagabushanam

Abstract : Sarcasm sentiment recognition is an area of natural language processing that is being probed into in the recent times. Even with the advancements in NLP, typical translations of words, sentences in its context fail to provide the exact information on a sentiment or emotion of a user. For example, if something bad happens, the statement 'That's just what I need, great! Terrific!' is expressed in a sarcastic tone which could be misread as a positive sign by any text-based analyzer. In this paper, we are presenting a unique real time 'word with its tone' spotting technique which would provide the sentiment analysis for a tone or pitch of a voice in combination with the words being expressed. This hybrid approach increases the probability for identification of special sentiment like sarcasm much closer to the real world than by mining text or speech individually. The system uses a tone analyzer such as YIN-FFT which extracts pitch segment-wise that would be used in parallel with a speech recognition system. The clustered data is classified for sentiments and sarcasm score for each of it determined. Our Simulations demonstrates the improvement in f-measure of around 12% compared to existing detection techniques with increased precision and recall.