Fast Supervised Topic Models for Short Text Emotion Detection

Abstract—With the development of social network platforms, discussion forums, and question answering websites, a huge number of short messages that typically contain a few words for an individual document are posted by online users. In these short messages, emotions are frequently embedded for communicating opinions, expressing friendship, and promoting influence. It is quite valuable to detect emotions from short messages, but the corresponding task suffers from the sparsity of feature space. In this article, we first generate term groups co-occurring in the same context to enrich the number of features. Then, two basic supervised topic models are proposed to associate emotions with topics accurately. To reduce the time cost of parameter estimation, we further propose an accelerated algorithm for our basic models. Extensive evaluations using three short corpora validate the efficiency and effectiveness of the accelerated models for predicting the emotions of unlabeled documents, in addition to generate the topic-level emotion lexicons.

Existing System:

WITH the development and popularization of social media services, users are increasingly inclined to communicate and share emotions on social network platforms, such as Twitter, Facebook, Sina Weibo, and WeChat. By using mobile devices, it is convenient for users to express comments on news or personal events, which generates large-scale short messages that are limited in length, usually spanning several sentences or less. Emotion detection on short messages is therefore quite valuable to capture the emotional tendency of social media users, for example, happy, sad, or surprise, toward entities, brands, or events.

Disadvantages:

* Traditional Model ML shows the less accuracy misclassification rate occurs

Proposed System:

the proposed models allow us to draw statistical conclusions for short documents. Although the sparse feature issue of short messages can be alleviated by WLTM and XETM, the time cost of estimating parameters is high due to the large-scale term groups and the sampling algorithm [10]. To improve the efficiency, we further propose the accelerated models dubbed fWLTM and fXETM for WLTM and XETM by combining the Alias method [11] and the Metropolis–Hastings (MH) sampling [12]. Experiments using a sensibly small and unbalanced news headlines with six emotions, a larger and balanced sentences annotated with seven emotions, and a Chinese corpus with eight emotions validate the effectiveness of the proposed methods.

Extension:

Using AI to help humans with handling their emotions and identifying their stress levels in the current stressful lifestyle will greatly help them manage their lifestyle. Using the deep learning techniques, it can be made possible by creating a virtual bot to observe and understand human emotions. The virtual chatbot helps to, understand the behavior of people suffering from depression, helps to monitor children’s activity without their knowledge and used in literature to fid genre of various books by identifying the words. In this paper, the comments from Reddit are used, preprocessed and trained using Deep Neural Network to learn the emotions of the user. The inference engine module, which is a hybrid machine learning consisting of LRRFC logistic regression and random forest regressor, is also interfaced. The model provides a high accuracy of response.