

An Improvised Feature-Based Method for Sentiment Analysis of Product Reviews

A. K. Yadav¹, D. Yadav¹ and A. Jain^{2,*}

¹CSE, National Institute of Technology, Hamirpur, Himachal Pradesh, India

²CSE, Jaypee Institute of Information Technology, Noida, Uttar Pradesh, India

Abstract

In today's society, sentiment analysis has gained due importance as it provides useful information about products that are used by variety of users. It gives a sneak peek of users' reactions towards the products that are available in the market at an early stage. It thus intimates users' perception and charts out a path that is beneficial for the market to grow as a whole. Although a lot of research is done to exploit the product based sentiment analysis but due to increase demand of the detailed components based products and their associated features, a novel method is desired to meet these criteria. So far, no such method is explored that analyses the product's components and their features simultaneously, on the basis of sentiments of the users. This paper proposes an improvised Feature Based Algorithm (FBA) for the sentiment analysis of product reviews while formulating a tree structure of product, components, and associated features. In addition, evaluation of double negative sentences, detecting questions and emotions from the review sentences are measured which increases efficiency of the FBA method. The comparison of product's components reviews is done with other existing algorithms-TF, TF-IDF and Naïve Bayes to demonstrate that the proposed FBA is coherent and auspicious.

Keywords: feature-based, sentiment analysis, positive sentiment, negative sentiment, polarity, product reviews

Received on 08 May 2020, accepted on 17 July 2020, published on 22 July 2020

Copyright © 2020 Arun Kumar Yadav et al., licensed to EAI. This is an open access article distributed under the terms of the Creative Commons Attribution licence (<http://creativecommons.org/licenses/by/3.0/>), which permits unlimited use, distribution and reproduction in any medium so long as the original work is properly cited

doi: 10.4108/_____

*Corresponding author. Email: ajain.jiit@gmail.com

1. Introduction

It is quite visible to all of us that social media is growing at an explosive rate. Everything is just a click away from the users. We just think, and our thoughts turn into reality with the help of the Web. Moreover, decision making is a genre which is being thoroughly supported by the information present on the Web. The information over the internet serves a perfect guide to us and eases our decision-making abilities. This has certainly beaten up the statistics of one being dependent upon- surveys, opinion polls etc. to determine the market trends that are functioning at a particular time. The tool of internet and information available over there has given a different outlook on users' perspective for measuring dynamics of the market, in particular. There is an abundance of such information available publicly. The fact

is that there is a huge reservoir of information available on the web which makes it very difficult to process and analyse according to users' needs. Therefore, there is a need to exploit more in the field of sentimental analysis so that users comfort level is maintained with ease [4].

Sentiment analysis [2] takes the backdrop of Natural Language Processing (NLP). The sentiments can be defined as ones feelings or thoughts that are expressed in words on the web, in the form of opinions. Marketing and customer services have absorbed the benefits of sentiment analysis to shape up the market scenario in the recent times. Applications of sentiment analysis have wide coverage as it determines users' behaviour and attitude towards the products that they use in their day-to-day activities [3] [15]. There is no surprise that inception and rapid growth of different fields in the sentiment analysis run in parallel with

