

Chapter 31

Method to Rank Academic Institutes by the Sentiment Analysis of Their Online Reviews

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ABSTRACT

A large number of reviews are expressed on academic institutes using the online review portals and other social media platforms. Such reviews are a good potential source for evaluating the Indian academic institutes. This chapter aimed to collect and analyze the sentiments of the online reviews of the academic institutes and ranked the institutes on the basis of their garnered online reviews. Lexical-based sentiment analysis of their online reviews is used to rank academic institutes. Then these rankings were compared with the NIRF PR Overall University Rankings List 2017. The outcome of this work can efficiently support the overall university rankings of the NIRF ranking list to enhance NIRF's public perception parameter (PRPUB). The results showed that Panjab University achieved the highest sentiment score, which was followed by BITS-Pilani. The results highlighted that there is a significant gap between NIRF's perception rankings and the perception of the public in general regarding an academic institute as expressed in online reviews.

INTRODUCTION

A sentiment (Kaur and Solanki, 2018) in generic terms refers to a feeling, an attitude, an opinion or an emotion expressed by a person. Sentiments cannot be termed as facts as they may vary from person to person. Hence, sentiments can be labeled as subjective impressions. Having given a text written by a

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person we need to understand the sentiment that it conveys. This comprises of sentiment analysis. Sentiment analysis is also referred to as opinion mining. Sentiment analysis being an interdisciplinary field of study covers various fields like artificial intelligence, text mining and natural language processing.

In today's digital age, online reviews, comments and critiques about various entities like consumer product reviews, movie reviews, tweets, university reviews and college reviews are found on numerous web portals. Sentiment analysis is the process of extracting sentiment from the text. The text can be in the form of online customer reviews, Tweets, blogs, news clips or any piece of text that people write to express their opinions about varied things or even about populist events. These reviews that are written by the public express opinions about the aforementioned articles and hence they help in swaying the mind of a new user in buying or rejecting a product. Sentiment analysis deals with understanding the sentiments behind those reviews..

Given the wide range of review websites available online, we needed a method to make sense of these vast available online review data of the Indian academic institutes. This required a method that could automatically analyze the sentiments of the reviews and thus help the students in making a conscious decision about the choice of institute they should join for further study. This method can efficiently augment the rankings as ranked by the NIRF and help it in adding to it the real sentiments of the people regarding an academic institute over a longer period of time. This research aimed to analyze and perceive the online reviews of the various different Indian academic institutes collected from a wide range of online review portals of universities and colleges. The data was analyzed by text categorization tools, natural language processing tools and the sentiment analysis approaches to determine the sentiment of people towards a particular academic institute of India. The results of which were used to rank the academic institutes. Furthermore, these ranks shall be compared with the yearly standardized rankings of the institutes that are issued annually NIRF namely, the NIRF Rankings 2017.

According to a review of research on Sentiment analysis as of 2017 (Mäntylä, et. al., 2018), Sentiment analysis is a field of research that is one of the fastest growing fields in computer science.

But, most of the work done in the field of sentiment analysis has been in context with social media like Twitter, Facebook and other domains of micro blogging which express movie and product reviews. Little has been done in the application of sentiment analysis to the reviews posted about the academic institutes like universities and colleges of India. This online data comprising of university and college reviews that is available on multiple websites needs to be harnessed to its full potential so that the public opinion and perception about these academic institutes of India comes to the fore.

SENTIMENT ANALYSIS USING SEMANTIC ANALYSIS APPROACH

In this approach a predefined lexicon/dictionary is used. This lexicon is full of words that have already been assigned a polarity value i.e. some words have been assigned negative polarity values while the others have been assigned positive polarity values. Firstly, pre-processing tools are applied on the text that we want to analyze and these tools segregate the full text into words/tokens after the initial pre-processing steps. These pre-processing steps comprise of normalization of the text with lemmatization and stemming of the text. After the whole of the text has been converted into words/tokens these are matched with the entries of the lexicon. If a match is found of that word in the lexicon, then the polarity values are assigned to each of these words. Then the aggregate polarity of the whole text is ascertained by adding up the polarity values of the words that comprise the text.

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