Chapter 18
Summarizing Opinions with Sentiment Analysis from Multiple Reviews on Travel Destinations

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ABSTRACT

Recently, the web has been crowded with growing volumes of various texts on every aspect of human life. It is difficult to rapidly access, analyze, and compose important decisions using efficient methods for raw textual data in the form of social media, blogs, feedback, reviews, etc., which receive textual inputs directly. It proposes an efficient method for summarization of various reviews of tourists on a specific tourist spot towards analyzing their sentiments towards the place. A classification technique automatically arranges documents into predefined categories and a summarization algorithm produces the exact condensed input such that output is most significant concepts of source documents. Finally, sentiment analysis is done in summarized opinion using NLP and text analysis techniques to show overall sentiment about the spot. Therefore, interested tourists can plan to visit the place do not go through all the reviews, rather they go through summarized documents with the overall sentiment about target place.

1. INTRODUCTION

The work presented in the paper mainly emphasizes multi-document summarization with sentiment analysis on the tourism domain based on past visitors' feedback or reviews on a tourist spot. We developed an efficient system which basically a collection of multiple servers used for specific purposes starting from gathering, processing information to dataset preparation with auto-addition of reviews on particular topics (e.g., GOA tourism), till preparation of auto-generated summarized contents with respective sentiment analysis. Researches on sentiment analysis/ranking for a product of a manufacturing company (Hu & Liu, 2004), or a hotel are going continuing since long days. To speedily access, significant analysis and make out of imperative decision using efficient methods for raw textual data available with the web pages in the form of social media, blogs, feedback, reviews etc., which receives user textual inputs directly. We tried to develop a system which deals a location like a city or a tourist place to give a summarized overview (from the visitor reviews available in natural language texts) along with the overall sentiment about the place. So, the future visitor will get the summarized positive feedbacks and negative feedbacks with a score of sentiment analysis, which definitely will help them to take decisions about the place. This is our major motivation to help a visitor to get rid of studying various reviews from different websites about a place.

User can get an efficient method for summarizing the different types reviews or opinions of the interested tourists on a specific tourist spot and further it analyses their sentiments towards the place. Initially, a text classification technique automatically arranges a set of documents (review) into predefined categories (positive and negative) and a summarization algorithm produces condensed and precise depiction of input data such that the output is the most considerable concepts of the basis documents. Finally, sentiment analysis is over and done with the summarized opinion using natural language processing (NLP) and text analysis techniques to show overall sentiment (positive or negative) about the interested tourist place.

To deal with the increasing volume of data in various web-media, automatic summarization techniques are major research challenge in the field of NLP and machine learning. It is a very relevant process of shortening a text document using computer programs to create a summary that retains the most important key text of the original document[1]. It can generate a meaningful summary into account variables such as length, writing style and syntax. The role of summarization is to present the most important information from the text in the shorter version without changing the meaning of the original text. Summarization can be classified into two types-- Extraction and Abstraction. Extraction is the selection of key phrases or important sentences that have the highest score among other documents. Abstraction is involved with the use of linguistic method and extracted sentences together for paraphrasing sections of the source documents. Sentiment analysis is another challenging research topic focus to develop a system which helps to evaluate ideas, feelings, attitude and behavior, and finally is used to make decisions.We prepared a dataset by manually collecting reviews from various websites about a famous tourist place `Goa' in India and kept in separate documents. And we developed methodologies which summarizes all the reviews in a single document with the sentiment analysis.

For example, a review like – "Goa is one such place which comes in top tourist spot of India. Everyone wish to visit this place be it with friends or spouse or family. This city is meant for one and all. Reaching this place is very easy as it has well connected roadways, trains as well as airways." may be summarized like– "Goa is top tourist spot of India to be in Goa with friends or spouse or family, one and all, well connected roadways, trains as well as airways." But generation of such summery is not that trivial. The issues involved are challenges in the identification of key opinion sentences, extractions of

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