

Chapter 1

Fundamentals of Opinion Mining

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ABSTRACT

Mining techniques in computer science have been evolving for the last two decades. Opinion mining is the latest buzzword in this evolution and goes to a deeper level to understand the drive behind people's behavior. Due to the richness of social media opinions, emotions, and sentiments, opinion mining examines that how people feel about a given situation, be it positive or negative. This chapter primarily focuses on explaining the fundamentals of opinion mining along with sentiment analysis. It covers the brief evolution in mining techniques in the last decade. The chapter elaborates on the significance of opinion mining in today's scenario and its features. It also includes a section to discuss the applications, challenges and research scope in opinion mining.

INTRODUCTION

The research in the field of sentiments and opinions has been going since a long back, but the term sentiment analysis and opinion mining were first introduced by Nasukawa and Dave in the year 2003. But after the year 2000, the research in the field of opinion mining has grown rapidly. The major reason behind this explosive growth is the expansion of World Wide Web. In addition to this, following factors also contributes to make it more demanding

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- Recent innovations of machine learning techniques in information retrieval and language processing.
- Due to the expansion of World Wide Web and drastic growth of social network, trained datasets for machine learning algorithms are easily available (Mukherjee & Liu, 2012).

With the recent developments in technology, communication among the people is becoming convenient day by day, the major percentage of this communication is happening through internet via various channels such as email, Facebook, Twitter, LinkedIn, Telegram, WhatsApp, etc. This huge data generated over internet communications will be a potential gold mine for discovering the hidden information into them.

In computer science both the terms “opinion mining” and “sentiment analysis” are often used interchangeably. Let us first look at the English definition of two key terms “opinion” and “sentiment”.

What Is Opinion?

Opinions play very important role in making decisions. To make any decisions, these opinions are key factors to conclude our decision. Opinion in general is a subjective statement not an objective statement. Subjective statement describes what a person thinks or believes about something. Opinion is defined as “a belief or judgment that fall short of absolute conviction, certainty, or positive knowledge; it is a conclusion that certain facts, ideas etc. are probably true or likely to provide so”. Alternatively, “it is an estimation of the quality or worth of someone or something” (Pang & Lee, 2008).

What Is Sentiment?

Sentiments are central to almost all human activities and act as key influencers of our behaviors. An individual makes any opinion based on the sentiments he had with the object in context. Sentiment is defined as “an attitude toward something; refined or tender emotion; manifestation of the higher or more refined feelings”. It is a thought influenced by a proceeding from feeling or emotion. Sentiments are generally be classified in two ways i.e. Supervised Learning and Unsupervised learning

- ***Classification Using Supervised Learning:*** It is implemented by building a classifier; two sets of documents are required in this set which are known as training set and test set. This approach is popularly known as Machine Learning based technique. Frequently used algorithms based in these techniques are

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