

Chapter 4

Opinion Mining: Using Machine Learning Techniques

Vijender Kumar Solanki

CMR Institute of Technology (Autonomous) Hyderabad, India

Nguyen Ha Huy Cuong

Quang Nam University, Vietnam

Zonghyu (Joan) Lu

University of Huddersfield, UK

ABSTRACT

The machine learning is the emerging research domain, from which number of emerging trends are available, among them opinion mining is the one technology attraction through which the we could get analysis of the interested domain or we can say about the review from the customer towards any product or we can say any upcoming trending information. These two are the emerging words and we can say it's the buzz word in the information technology. As you will see that its widely use by the corporate sector to uplift the business next level. Before two decade you will not read any words e.g., Opinion mining or Sentiment analysis, but in the last two decade these words have given a new life to information technology domain as well as to the business. The important question which runs in the mind is why use sentiment analysis or opinion mining. The information technology has given number of new programming languages, new innovation and within that the data mining has given this trends to the users. The chapter is covering the three major concept's which comes under the machine learning e.g., Decision tree, Bayesian network and Support vector machine. The chapter is describing the basic inputs, and how it helps in supporting stakeholders by adopting these technologies.

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1. INTRODUCTION

The information technology has given the number of new programming languages, new innovation and within that, the data mining has given this trend to the users. We would like to say that sentiment analysis has given a tremendous growth to the business sector and that is the reason today almost every growing corporate sector is involving an information technology team who is keeping eyes on opinion mining techniques to bring their business to next level (Rajeev & Rekha, 2016).

Sentiment Analysis or Opinion Mining is the field of information technology, in which the study of the people's mindsets, in term of opinion, attitude, information, and perception is carried out and it helps them, stakeholders, to study about the product, which he is placing in the market for the sale. In early time the feedback is taken as either manual or online or we can say by the point based mechanism. But it has been noticed that the input towards the product, the organization is receiving is not genuine and it seems it's not giving any connection with the real-time statistics. So it has come in the notice that, it's necessary to notice the mood of the users who are giving the opinion about the product. The opinion of users change as their mood change for the same products, this given a new challenge before the business, about the product, that same product is appreciated and depreciated by users in different situations, hence it makes them puzzled to understand who is correct in the term of elevating business (Pang & Lee, 2008).

In this chapter the main focuses have been given on the idea of the three famous machine learning techniques namely,., Naïve Bayes Classifiers, Decision Tree and Support vector machine. In machine learning, though a variety of techniques available, but the authors have taken the basic and foundation based ideas, which are quite popular in the context of machine learning and opinion mining. Please note while preparing the chapter these three parameters have been considered as important, first the basics of the techniques, their applications and lastly the challenges related to these technology implementations have been discussed in this chapter.

According to the authors, this chapter will be helpful to the learners, who are willing to dive in depth of machine learning and it will help them to get an impression on what type of problem can be taken in the machine learning field and what will be the expected outcome in case any of one technique opts for the problem study.

The chapter is divided into the five sections:

- Section I is covering the general Introduction to machine learning techniques and opinion mining.
- Section II will cover the three machine learning technology and its applications and will cover the challenges of the technology, or we cans say that it will basically explore the challenges in implementations and their drawbacks.

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