NOVEL DEEP LEARNING APPROACHES FOR OPINION MINING WITH MACHINE LEARNING

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ABSTRACT:

The popularity of online marketplaces over the past several decades, online vendors and merchants now request feedback from their customers on the goods they have purchased. As a consequence, millions of evaluations are produced every day, which makes it challenging for a potential customer to decide whether to buy the goods or not. For product makers, it is challenging and time-consuming to analyse this massive volume of comments. The challenge of categorizing reviews according to their general semantic content (positive, negative, neutral) is examined. SVM and Nave Bayes, two different supervised machine learning approaches, have been tested on Amazon beauty goods to perform the study. Then, their accuracy levels were contrasted. The outcomes demonstrated that the SVM technique performs better than the Nave Bayes.

KEYWORDS:

INTRODUCTION

online marketplaces over the past several decades, online vendors and merchants now request feedback from their customers on the goods they have purchased. Every day, millions of evaluations are written about various goods, services, and locations online. Due of this, the Internet is now considered to be the most significant source for information about products and services. People frequently shop online at Amazon, one of the biggest e-commerce sites, where they may read hundreds of evaluations left by other consumers about the things they want to buy. These evaluations provide insightful thoughts regarding a product, such as its features, quality, and suggestions, which aids buyers in understanding nearly all of its details. Customers gain from this, but it also benefits merchants who produce their own goods since it makes it easier for them to comprehend customers' wants.

2. SENTIMENT CLASSIFICATION AND ANALYSIS

Sentiment analysis, commonly referred to as opinion mining, is a challenge in natural language processing (NLP), which entails finding and extracting subjective data from text sources. The goal of sentiment classification is to categorise user evaluations that have been published as either positive or negative, so the system does not have to fully comprehend the semantics of each word or document.

Yet, it's not enough to just assign words a good or bad connotation. There are several difficulties present. It is not always effective to categorise words and sentences based on their preceding positive or negative polarity. For instance, the word "amazing" has a positive connotation by itself, but if it is used with a word of negation, such as

"not," the context might radically shift

2.1 SENTIMENT CLASSIFICATION USING MACHINE LEARNING METHODS

By employing example data, machine learning seeks to create an algorithm that will improve the system's performance. There are two primary phases to the sentiment analysis solution that machine learning offers. The model must first "learn" from training data before it can be used to categorise unobserved data in the subsequent stage.

Different categories may be used to classify machine learning algorithms:

Learning that is either supervised, semi-supervised, or unsupervised.

In supervised learning, the algorithm learns from training data in a manner similar to a teacher monitoring their pupils' learning (Brownlee 2016). The supervisor is somehow instructing the algorithm as to what results it should produce. Data for both the required input and output are therefore given. Additionally, the training data must already be labelled.

Unsupervised learning is taught on unlabeled data with no matching output, as opposed to supervised learning. The underlying structure of the data collection should be discovered by the algorithm on its own. This implies that in order to decide the output without having the correct answers, it must find comparable patterns in the data. Clustering is one of the most crucial techniques for unsupervised learning issues. Semi-supervised learning, which combines the advantages of supervised and