Finding Purchase Intention Using Social Media

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ARTICLEINFO

ABSTRACT

The e-commerce sector, and more especially, the number of people purchasing goods online, has grown significantly in recent years. A great deal of study has been done to identify user purchasing patterns and, more crucially, the variables that influence a user's decision to purchase a product or not.

This study aims to investigate the feasibility of identifying and forecasting a user's intention to acquire a product, and then directing the user towards the product through a customized advertisement or promotion. We also want to create software that will assist companies in identifying possible buyers of their goods by quantifying the buyers' intent to buy based on user profile information and tweets.

After analyzing tweet data using a variety of text analytical models, we were able to determine whether or not a user had expressed a desire to buy a product. Furthermore, our research revealed that the majority of users who had initially expressed a desire to buy the product had also gone on to make a purchase.

Keywords – Text Analytics, Sentiment Analysis, Twitter Tweets, Deep Learning, Purchase Intention.

INTRODUCTION

Numerous studies have been conducted to examine the purchasing patterns of internet users. Few, though, have addressed the intention of customers to purchase items. Our goal is to create a machine learning method that can detect possible buyers of a product by quantifying the intention to buy based on tweets.

Although text analytics can be done manually, it is inefficient, thus we have utilized a machine learning approach based on text analysis. Finding patterns and trends will be significantly faster and more effective when text mining and natural language processing technologies are used. We can remark that the effort of detecting purchase intentions is somewhat similar to the task of determining desires in product reviews.

LITERATURE SURVEY

I. SCENARIO

Social media platforms are becoming a vital tool for studying and forecasting consumer purchase intentions in the fields of modern marketing and consumer behavior analysis. Businesses and researchers have a unique chance to learn about the interests, opinions, and intentions of potential customers because to the ever-increasing volume of data collected on platforms like Twitter. Through the use of Twitter data, this project aims to investigate and advance this emerging topic. It looks into user behavior on social media, including tweets, retweets, and engagement patterns, with the goal of creating predictive models that can identify and predict what consumers will buy.

This survey will provide the groundwork for future research and analysis by delving into the numerous approaches, data sources, and important discoveries in the field of predictive analysis based on Twitter data through a thorough evaluation of the body of existing literature. Not only is it fascinating from an academic standpoint to comprehend purchase intention prediction using Twitter data, but it also has a great deal of practical use for companies looking to improve their digital marketing tactics.

DATA COLLECTION

The foundation of the purchase intension project relies on data gathering. This involves social media platforms like twitter, Instagram etc. A manually annotated data collection was constructed for this investigation because annotated Twitter corpora regarding the identification of purchase intention were not available. All collected data then processed and generate a meaningful insight.

SYSTEM ARCHITECTURE
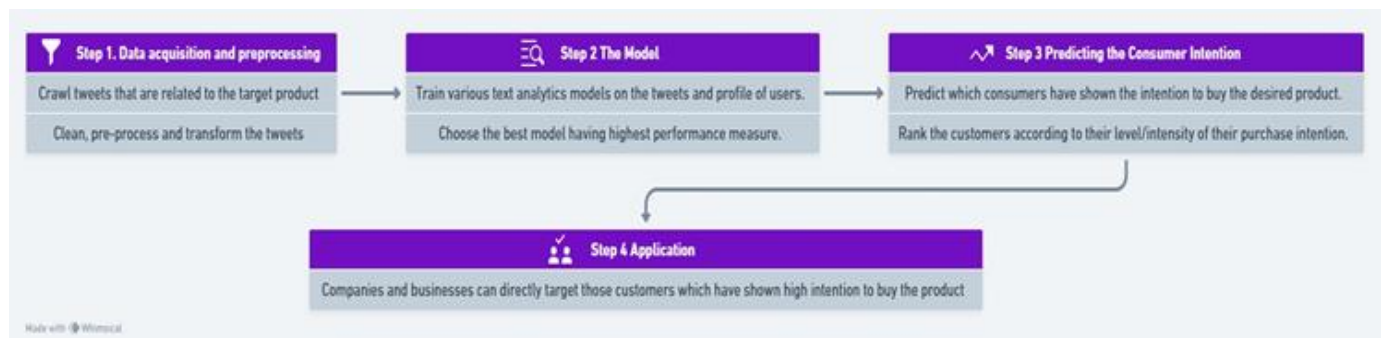
ALGORITHM

Step I: Start

Step II: Define Project Objectives

- Define the main goals and objectives of the project.

Step III: Collect Twitter Data

- Set up a method to gather Twitter data related to the target industry or product category.

- Use the Twitter API or a web scraping tool to collect relevant tweets.

Step IV: Preprocess Data

- Clean and prepare the collected Twitter data for analysis.

- Remove noise, such as special characters and irrelevant information.

- Tokenize the text and handle missing data if necessary.

Step V: Perform Sentiment Analysis

- Apply a sentiment analysis algorithm to categorize tweets as positive, negative, or neutral.

- Store the sentiment scores associated with each tweet.

Step VI: Feature Extraction & Engineering

- Identify relevant features from the Twitter data that may indicate purchase intention.

Step VII: Build Predictive Models

- Select appropriate machine learning algorithms for predicting purchase intentions.

- Split the data into training and testing sets for model development.

- Train and evaluate the models on the training and testing data.

Step VIII: Evaluate Model Performance

- Use the testing dataset to evaluate model performance.

Step IX: Optimize Models

- Fine-tune the models for improved performance through techniques like hyperparameter tuning and feature selection.

Step X: Generate Insights

- Translate the research findings into actionable insights for businesses and marketers. Consider practical applications based on the model's predictions.

Step XI: Share Findings

- Disseminate the research findings through presentations, publications, or knowledge sharing platforms to relevant stakeholders.

Step XII : End of Algorithm

FLOW CHART
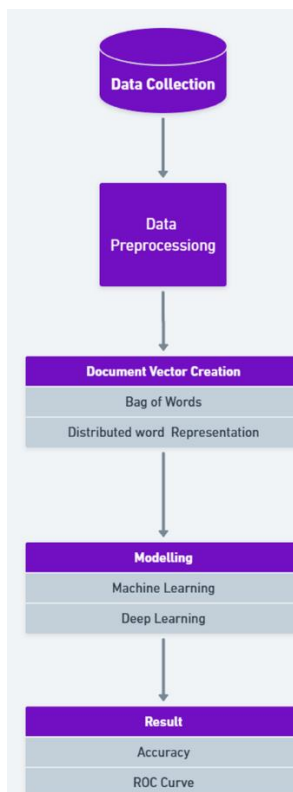
CONCLUSION

Since we were creating the model from scratch and using our own dataset, our results were pretty promising. Since there isn't a publicly accessible dataset for buy intention based on Twitter corpora, we had to construct our own. In comparison to previous studies conducted in the same field, our project is unique in that we have implemented six distinct models and, after assessing them, have selected the optimal model that is tailored to the product data.

FUTURE SCOPE

Our goals for the future include boosting word embedding quality and increasing prediction accuracy through the integration of sophisticated transformer models like BERT. We will also investigate the possibility of forecasting particular product attributes that customers plan to purchase, enabling more specialized marketing approaches that follow the theme of targeted advertising.

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