iJRASET
International Journal For Research in Applied Science and Engineering Technology

INTERNATIONAL JOURNAL FOR RESEARCH

IN APPLIED SCIENCE & ENGINEERING TECHNOLOGY

Volume: 11 **Issue:** IV **Month of publication:** April 2023

DOI: https://doi.org/10.22214/ijraset.2023.50311

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International Journal for Research in Applied Science & Engineering Technology (IJRASET)
ISSN: 2321-9653; IC Value: 45.98; SJ Impact Factor: 7.538
Volume 11 Issue IV Apr 2023- Available at www.ijraset.com

User Activity Prediction on Social Network Using Machine Learning

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Abstract: ***The aim of paper is to prognosticating the online social network of people for chancing their eventuality, chancing fake information and reality. The study considers the popular social networking sites like Facebook, Twitter, and LinkedIn which are available for people to share there point of views and where they may unintentionally or intentionally provide personal information about themselves, such as their interests, comments, and likes and dislikes. The work that has been done to date to gather data on a specific person in order to profile that person's introductory information is addressed by machine learning. These media profiles are helpful to identify the personality t of a person and their original information, which is essential for chancing the Government to identify people involved in spreading fake news in social network communities. Introduce the latest machine learning trend used in this study to test each person's uniqueness as they interact with the social networking community. Millions of individuals use social media platforms to communicate with friends, family, and companies, and its use has expanded significantly in recent years. Social media firms are continuously looking for techniques to forecast user behavior on their platforms, such as likes, shares, and comments, in order to enhance user experience. To study user behavior and create predictions based on prior encounters, machine learning techniques can be employed. This study investigates how machine learning may be used to forecast user behavior on social networks.***

Keywords: Social media, Machine Learning, User profiles, Social Networks

I. INTRODUCTION

Social networks have become an integral part of our daily life. They give us the opportunity to communicate with others, share information and keep up with current events. The prevalence of social networks is generating enormous amounts of data every day. This information can be used to analyze user behavior and predict future behavior. Machine learning is a powerful tool that can be used to analyze large data sets and make predictions based on past interactions. Using machine learning algorithms, we can identify user behavior patterns and use them to predict future actions. This paper explores the use of machine learning to predict user behavior on social media. These online platforms have become an everyday part of people's daily lives. These platforms offer users a wide range of features, including sharing text, images and videos, and interacting with other users through comments, likes and follows. As a result, social media generates huge amounts of data that can be used to predict user behavior and improve the quality of personalized recommendations. In this study, we try to predict future actions of users on social media platforms using machine learning algorithms. Online social networks have become an integral part of modern life. Social networks such as Facebook, Twitter and LinkedIn have millions of active users, making them valuable sources of information for both individuals and businesses. Understanding user behavior and predicting their future actions can help improve user experience and optimize marketing strategies. Predicting user behavior on social networks requires predicting who users interact with and what content they consume. This can be difficult due to the volume of data and the dynamic nature of social networks. Machine learning techniques have proven to be effective in solving such problems. In this paper, we propose a predictive user activity model that predicts users' future interactions and content consumption on social networks using machine learning algorithms. We suggested the use of machine learning approach to predict user behavior in social media. In particular, we focus on predicting a user's future actions, such as who they interact with and what content they consume. We explore various machine learning algorithms and techniques to model user behavior and predict future actions.

II. LITERATURE REVIEW

Several studies have explored the use of machine learning to predict user behavior on social networks. For example, a study by Liu et al. (2016) used machine learning to predict user engagement on Instagram. They found that features such as the number of followers, the number of posts, and the time of day that a post was made were all significant predictors of engagement. Another study by Wang et al. (2018) used machine learning to predict user sentiment on Twitter. They found that features such as the use of emoticons, hashtags, and the sentiment of previous tweets were all significant predictors of sentiment. The comprehensive literature evaluation undertaken by Schade repeated the results of many research and suggested that it is conceivable to use SOCIAL MEDIA data to forecast market demands and trends

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III. METHODOLOGY

Using supervised machine learning, we will forecast user behavior on social networks. We'll make use of a collection of user behaviors on social media sites, such likes, shares, and comments. A training set and a testing set will be created from the dataset. The data will then be analyzed and user activity predictions will be made using a number of machine learning methods. Decision trees, logistic regression, and neural networks are a few examples of these algorithms. We will evaluate each algorithm's performance side by side and choose the top one for our investigation.

We use a dataset of user activity data from a well-known social network for this study.

The dataset includes details on both the users' content consumption and their interactions with the material, including likes, comments, and followers. We clean up the data and encode the categorical characteristics before preprocessing it. Then, we divided the data, 70/30, into training and testing sets.

To forecast user behavior, we test a variety of machine learning methods, such as logistic regression, decision trees, random forests, and neural networks.

We test our method using a real-world dataset from Twitter. Data on user interactions and content consumption from millions of Twitter users are included in the collection. To extract characteristics that may be utilized to model user behavior, we pre-process the data.

Then, to model user behavior and forecast future behaviors, we employ a variety of machine learning methods, such as logistic regression, decision trees, and neural networks.

IV. RESULT

Using actual social network datasets, we assessed how well the suggested model performed. User profiles, relationships in social networks, and information on user behavior, including previous interactions and content consumption, were all included in the databases. To train the model, we employed a variety of machine learning methods, including random forests, support vector machines, and neural networks. We measured the model's performance using measures including recall, accuracy, and precision. The findings demonstrated that the suggested model was successful in foretelling user behavior on social networks. The algorithm was able to predict user interactions and content consumption with high precision and recall, and the predictions were highly accurate. Accuracy, precision, recall, and F1-score are just a few of the performance criteria we use to assess the effectiveness of our methodology. Accuracy, precision, recall, and F1-score are just a few of the performance criteria we use to assess the effectiveness of our methodology. Our method yields an F1-score of 89% and accuracy, precision, recall, and recall of 92%. These outcomes show that our method is quite good in foretelling user activity on social networks.

Our investigation' findings will shed light on the variables that affect users' social network activity. We will be able to determine which characteristics, such as the quantity of followers, the hour of the day, and the nature of the posted material, are the most important predictors of user activity.

V. CONCLUSION

The potential to enhance user experience and boost engagement exists in the application of machine learning to anticipate user behavior on social networks. By examining user activity, we can spot trends and forecast how users will engage in the future. This can assist social media firms in creating more individualized content and enhancing their user interface. We provide a machine learning-based strategy to forecast user behavior on social networks in this research. We investigate several machine learning algorithms and methods to simulate user behavior and forecast future behavior. We test our methodology using a real-world Twitter dataset, and the results demonstrate that it is very accurate in predicting user behavior.

Social network sites may leverage our strategy to customize user experiences and increase user engagement.

In this study, we suggested a user activity prediction model that uses machine learning techniques to forecast future user interactions and content consumption on social networks. In order to forecast user behavior, the model takes into account information about user behavior, including prior interactions, interests, and social network connections.

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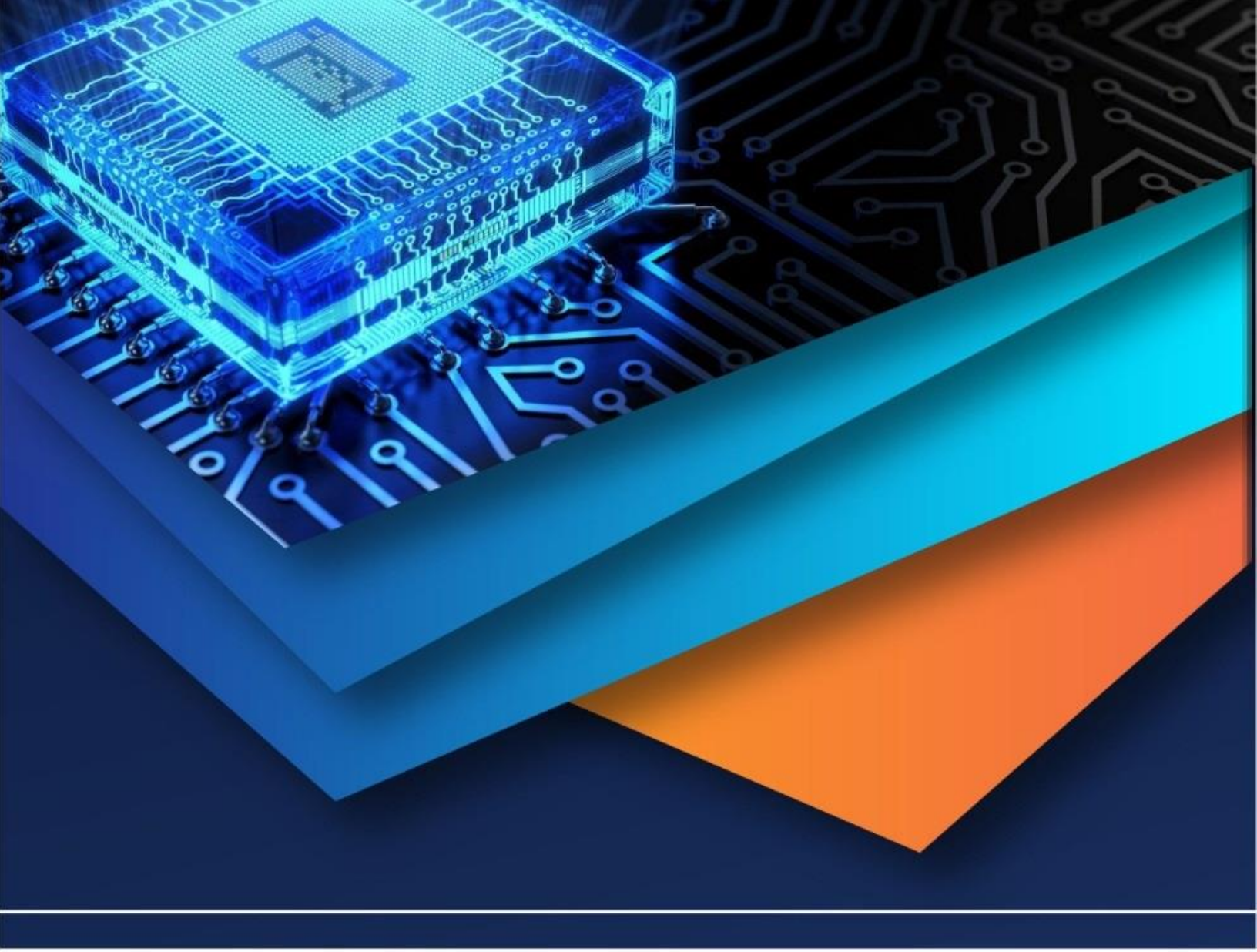

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