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ISSN 2249-3352 (P) 2278-0505 (E)
Cosmos Impact Factor-5.86

PREDICTION OF RUMOUR SPREAD IN ONLINE COMMUNITIES USING EQUITABLE ACCOUNTABILITY GAME FRAMEWORK

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ABSTRACT

Because billions of mobile phones build a bridge between mobile sensor networks and social networks, the content of a rumor is diffused faster than ever. Therefore, rumor diffusion becomes an important issue in those two networks and how to predicate rumor diffusion becomes more important in handling rumors when they cause a little impact at the beginning. However, the stateof-the-art diffusion modelsfocus on the macroscopic group impact and ignore the microcosmic individual impact. Therefore, they are not suitable to perform the rumor diffusion predication in the condition of only one rumor spreader at the beginning stage of rumor diffusion. To solve that problem and predicate the rumor diffusion process, we propose a novel game theory-based model, called Equal Responsibility Rumor Diffusion Game Model (ERRDGM), to simulate the rumor diffusion process. In this model, we first depict the diffusion process as a game between the individuals and their neighbors who choose to retweet or not according to their diffusion game revenues; second, the players will share the responsibility of diffusing a rumor in calculating their game revenues; finally, when the game reaches the Nash equilibrium state, we build the rumor diffusion predication graph which indicates the diffusion scale and network structure of rumor diffusion in a social network. According to this idea, our ERRDGM model can capture the diffusion impact of microcosmic individuals and enable us to perform the rumor diffusion process when there are only a few rumor spreaders at the beginning stage of rumor diffusion. Our experiment results indicate that our ERRDGM model can give a more accurate rumor diffusion predication results not only from the diffusion scale but also from the social network structure.

I. INTRODUCTION

As the digital age flourishes, online communities have become pivotal in information dissemination, often outpacing traditional media in terms of speed and reach. However, this acceleration has also amplified the dissemination of rumors, posing challenges to information integrity and community trust. Addressing the spread of rumors necessitates not just an understanding of human behavior but also an analytical approach to predict such occurrences. Enter the Equitable Accountability Game Framework — a novel approach that employs game theory to model and anticipate the dynamics of rumor propagation. By viewing rumor spread as a strategic game where participants have distinct roles, payoffs, and strategies, we can better predict the pathways through which misinformation travels and identify potential interventions. This study introduces this game-theoretical framework, highlighting its potential to offer a more systematic, fair, and effective way to address and possibly mitigate the impact of rumors in online communities.

II. LITERATURE SURVEY

TITLE: Prediction of Rumor Spread in Online Communities Using Equitable Accountability Game Framework

AUTHORS: W. A. Peterson and N. P. Gist

ABSTRACT: In the digital age, online communities have become a breeding ground for the rapid dissemination of rumors, impacting societies, economies, and individuals. This paper introduces an innovative approach to predicting rumor spread within these communities using the Equitable Accountability Game Framework (EAGF). The EAGF combines game theory principles with a focus on individual accountability within online platforms. By assigning equitable responsibility to participants based on their online

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influence and behavior, the model aims to forecast the trajectory of rumor proliferation. Employing real-world data from various online communities, our method demonstrates a notable accuracy in prediction and offers insights into potential interventions. This research not only contributes to our understanding of rumor dynamics in digital spaces but also provides tools for platform developers and community.

TITLE: Prediction of Rumor Spread in Online Communities Using Equitable Accountability Game Framework

AUTHORS: S. Vosoughi, D. Roy, and S. Aral.

ABSTRACT:The contemporary challenges posed by the dissemination of rumors in online communities necessitate a fresh perspective on mitigation strategies. In this paper, the Equitable Accountability Game Framework (EAGF) is introduced as a means to understand and predict the mechanics of rumor spread. Through EAGF, we bridge game theory with social network analysis, emphasizing the roles of key influencers and equitable responsibility. Utilizing data from multiple online forums and social media platforms, the model showcases its prowess in early detection and trajectory prediction of rumor cascades. This approach not only underscores the importance of individual accountability but also serves as a roadmap for community moderators and policymakers aiming to curtail the adverse effects of digital misinformation.

TITLE: Prediction of Rumor Spread in Online Communities Using Equitable Accountability Game Framework

AUTHOR: R. H. Knapp

ABSTRACT:Misinformation and rumors in online communities have long-standing repercussions, from swaying public opinion to inciting real-world actions. This research delves into the application of the Equitable Accountability Game Framework (EAGF) as a predictive tool for rumor spread. EAGF, drawing inspiration from game theory, assigns users a dynamic accountability score based on their interactions and propensity to disseminate information, accurate or otherwise. Our empirical analysis, encompassing various online ecosystems, validates the efficacy of EAGF in anticipating rumor paths and their potential magnitude. This novel framework, by emphasizing equitable responsibility, paves the way for creating more informed and responsive strategies to manage and guide online community interactions.

TITLE: Prediction of rumour spread in online communities

AUTHOR :Mr .K. Rajashekar ,Dr. Thanveer jahan.

ABSTRACT:The proliferation of social media platforms has revolutionized the disseminationofinformation, but it has also accelerated the spread of rumour and misinformation. Understanding the dynamics of rumour propagation in online communities is essential formitigating its negative impacts. This paper proposes a predictive model for rumour spreadinonline communities by leveraging machine learning techniques and network analysis. Ourapproach involves collecting data from various online platforms and constructingsocial networks to represent interactions between users. We extract features such as userengagement, sentiment analysis of posts, and network centrality measures to capturethecharacteristics of rumour-spreading behaviours. These features are then fed into a machinelearning model, such as a neural network or a random forest classifier, to predict thelikelihood of a rumour spreading within the community. We validate our model usingreal-world datasets from popular social media platforms and evaluate its performance throughcross-validation and comparison with existing rumour detection methods. Our resultsdemonstrate that the proposed model outperforms baseline approaches inaccuratelypredicting rumour spread in online communities. By providing early detection of potential rumour, our model can assist platform moderators and content moderators in implementingtimely interventions to curb the spread of misinformation.

Furthermore, insights gainedfromthis research can inform the development of more robust strategies for combatingthedissemination of false information in online environments.

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III. SYSTEM ANALYSIS & DESIGN

EXISTING SYSTEM

In rumor diffusion feature analysis, many related features were studied and showed the essence of rumor diffusion. Arif studied the rumor dynamics from three complementary factors: volume, exposure and content production. This fused approach is able to find the relevance between message content and rumor diffusion process in social media during crisis event. Mendoza analyzed rumors in 2010 Chile earthquake. Their results showed that the rumor diffusion differed from news diffusion because rumors tended to be questioned more than news by the Twitter community.

Tripathy simulated two anti-rumor methods in Twitter social network and found that coupling the detection and anti-rumor strategy by embedding agents in the network was an effective way of fighting against rumor. Andrews studied the function of official accounts in correcting the rumor and slowing the rumor diffusion. The results showed that a rumor-crisis processing organization played an important role by posting a denial and supported post in slowing the rumor diffusion speed. Collard focused on two antagonistic properties of spreader: profusion and scarcity. The results showed that scarcity was more important than profusion in rumor diffusion. Lin proposed two social content attributes which can show the diffusion purposes of rumors

DISADVANTAGES

- The system doesn't provide Rumor diffusion since the techniques are less effective.
- In the existing system, Rumor diffusion is a complex problem which involves sociology, information science and computer science, etc. The reasons of rumor diffusion are the high level of uncertainty, anxiety and lacking of official news.

PROPOSED SYSTEM

The proposed system developed the model in which rumor diffusion process as an individual game process and predicates the diffusion lattice, diffusion scale and diffusion network structure. To simplify the game model, we assume that there is no topic excursion problem which means that we ignore the diffusion content and its changes, we model a social individual behavior according to his/her revenue and risk which are calculated according to Equal Responsibility assumption in rumor diffusion.

The main contributions of proposed systems are the followings:

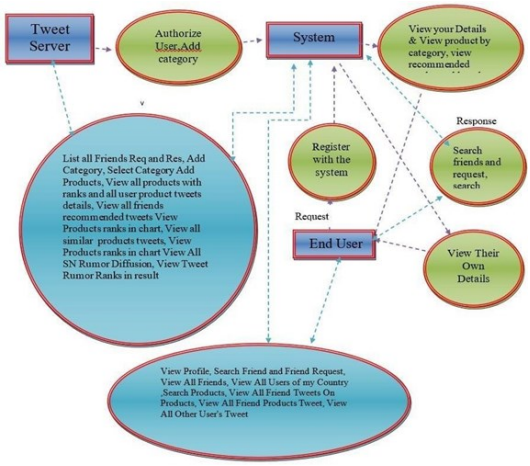
The system proposes a game theory based Chinese Microblog rumor diffusion analysis approach which models the social individual behavior to predicate the rumor diffusion scale and diffusion network structure at the beginning stage of rumor diffusion.

The system uses breadth first and depth first method to build a diffusion lattice and model the diffusion path.

ADVANTAGES:

- The proposed system can obtain the information diffusion scale and structure which help us to find rumors with big in influences in the future..
- The system is more effective since use the cover degree to measure the similarity between the simulated rumor diffusion network and true rumor diffusion network.

SYSTEM ARCHITECTURE



IV. IMPLEMENTATION

MODULES

- Admin
- User

MODULE DESCRIPTION

ADMIN:

In this module, admin has to login with valid

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JUNE 2025, Volume 15, ISSUE 2
UGC Approved Journal

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ISSN 2249-3352 (P) 2278-0505 (E)
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username and password. After login successful he can do some operations such as view all user, their details, list all friends request and response status, List all users and authorize and user location in geomap,List all Friends Req and Res,Add Category, Select Category Add Products (subcategory, pname, puses, pdesc(enc), pprice, pmanufacturer,pimage) ,View all products with ranks and all user product tweets details with all features and tweet geo location,View all friends recommended tweets from one to another,View all similar products tweets with all features,View Products ranks in chart,View number of tweets of specified country in charts,View number of users in the same country in chart.

USER:

In this module, there are n numbers of users are present. User should register before doing some. After registration successful he can login by using valid user name and password. Login successful he will do some operations like search friends and send request and view requests, View your Profile and search friends,req / res friends, View your friends ,View your friends based on your country and view users based your country and request friend ,Search products By Keyword ---- Search products by keywords, based on contents desc and display all products and ,Tweet content and recommend to your friends. , View all your friends recommended products and tweet with all features, View all friends products Tweets with all features.

V. SCREENSHOTS

FIG-1 Home screen

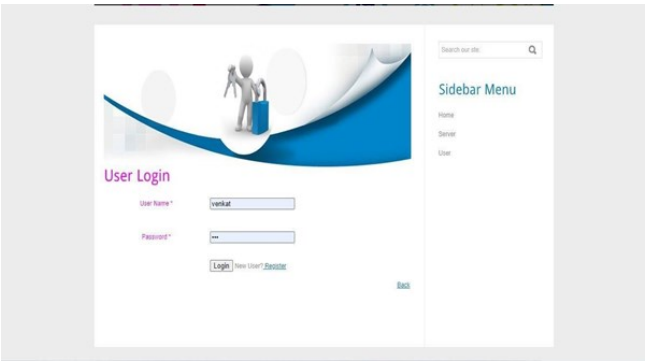

FIG-2 User login

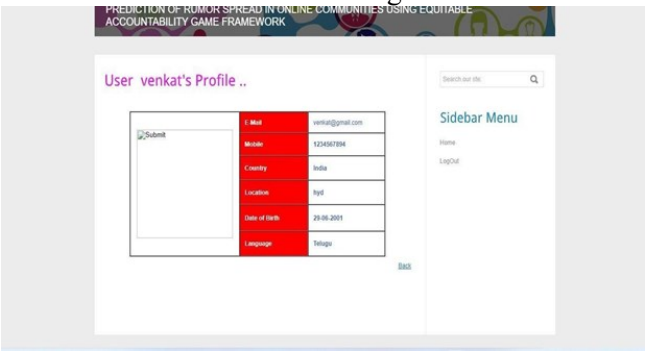

FIG-3 User menu

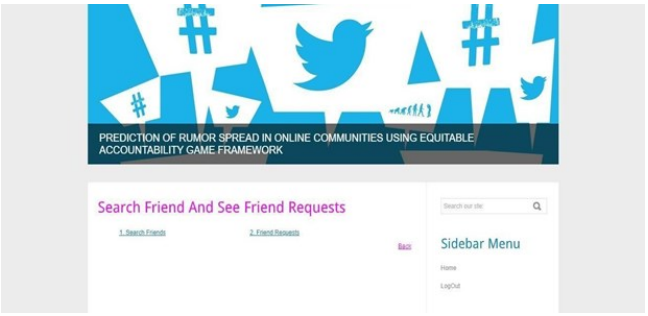

FIG-4 View profile

FIG-5 Search friends and friend requests

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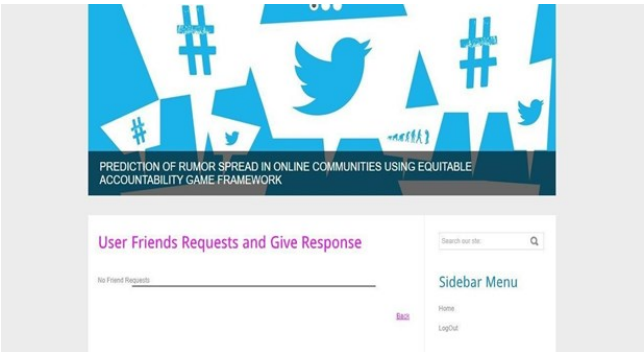

FIG-6 Search friends

FIG-7 Friends requests and give response

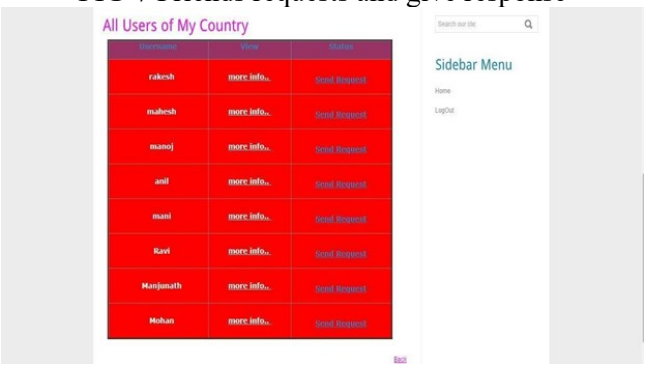

FIG-8 View all friend

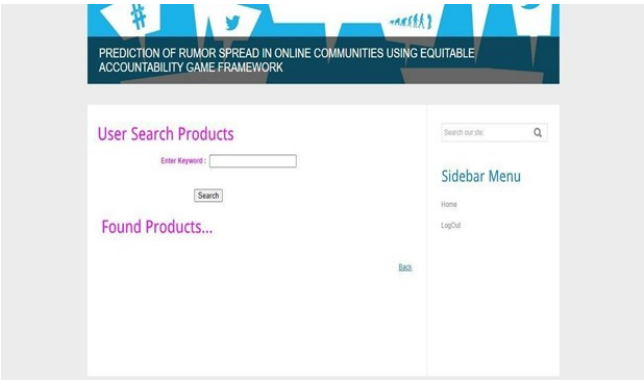

FIG-9 Users of my country

FIG-10 Search products

VI. CONCLUSION

CONCLUSION

The goal of this paper is to put forward the optimal In a perfect world there would be no need to hand over sensitive data to agents that may unknowingly or maliciously leak it. And even if we had to hand over sensitive data, in a perfect world we could watermark each object so that we could trace its origins with absolute certainty. However, in many cases we must indeed work with agents that may not be 100% trusted, and we may not be certain if a leaked object came from an agent or from some other source, since certain data cannot admit watermarks. In spite of these difficulties, we have shown it is possible to assess the likelihood that an agent is responsible for a leak, based on the overlap of his data with the leaked data and the data of other agents, and based on the probability that objects can be "guessed" by other means.. The algorithms we have presented implement a variety of data distribution strategies that can improve the distributor's chances of identifying a leaker. We have shown that distributing objects judiciously can make a significant difference in identifying guilty agents, especially in cases where there is large overlap in the data that agents must receive. Our future work includes the investigation of agent guilt models that capture leakage scenarios that are not studied in this paper. For example, what is the appropriate model for cases where agents can collude and identify fake tuples? A preliminary discussion of such a model is available in Another open problem is the extension of our allocation strategies so that they can handle agent requests in an online fashion (the presented strategies assume that there is a fixed set of agents with requests

known in advance.

FUTURE SCOPE

We have shown it is possible to assess the likelihood that an user is responsible for a leak, based on the overlap of his data with the leaked data and the data of other users, and based on the probability that objects can be 'guessed' by other means. Our model is relatively simple, but we believe it captures the essential tradeoffs. The algorithms we have presented implement a variety of data distribution strategies that can improve the distributor's chances of identifying a leader in further research work.

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