



IJIRCCCE

e-ISSN: 2320-9801 | p-ISSN: 2320-9798



INTERNATIONAL JOURNAL OF INNOVATIVE RESEARCH

IN COMPUTER & COMMUNICATION ENGINEERING

Volume 10, Issue 5, May 2022

ISSN INTERNATIONAL
STANDARD
SERIAL
NUMBER
INDIA

Impact Factor: 8.165

 9940 572 462

 6381 907 438

 ijircce@gmail.com

 www.ijircce.com

Fake Review Detection System

Chetan Kumar G S¹, Priyanka T²

Assistant Professor, Dept. of MCA, University BDT College of Engineering, Davanagere, Karnataka, India

PG Student, Dept. of MCA, University BDT College of Engineering, Davanagere, Karnataka, India

ABSTRACT: Many of our daily activities have been influenced by the Internet's rapid growth. Ecommerce is a rapidly growing industry. In general, e-commerce sites allow customers to write reviews about their services. The existence of these reviews can be used to gather information. Companies, for example, can use it to make design decisions for their products or services, whereas potential customers can use it to decide whether to buy or use a product. Unfortunately, the importance of the review is abused by certain parties who attempt to create fake reviews, either to increase the popularity of the product or to discredit it.

KEYWORDS: fake reviews, fake reviews detection, opinion mining, analysis

I. INTRODUCTION

The growing popularity of e-commerce and the rapid development of online shopping have resulted in a large number of online reviews describing consumer perceptions of various goods and services [1]. As a result, an increasing number of consumers rely on online product reviews to determine the quality of a product or service, which influences their purchasing decisions. Positive reviews obviously induce consumers to purchase specific products, bolstering financial gains for manufacturers, whereas negative reviews prompt consumers to seek alternatives, resulting in financial losses. Many vendors and retailers attempt to manipulate online reviews due to competition and vested interests. For example, they frequently post deceptive reviews in an attempt to mislead potential customers and influence them to make risky purchasing decisions. In the worst-case scenario, they may hire a large number of spammers or collective spammers to post glamorised positive reviews in order to improve their product reputation or harmful negative reviews in order to suppress their competitors.

II. RELATED WORK

Various approaches to assessing the credibility of information disseminated via social media have been proposed by researchers in recent years, depending on the context [2].

Historically, credibility has been associated with believability, trustworthiness, perceived reliability, expertise, accuracy, and a variety of other concepts or combinations of them [3].

Credibility, according to Fogg and Tseng [4], is a perceived quality of the information receiver that has multiple dimensions.

Different characteristics can be associated with: (i) the source of information, (ii) the information itself, including its structure and content, and (iii) the media used to disseminate information [5]. It has been demonstrated that, when these characteristics are considered in terms of credibility, the impact of the delivery medium can change people's perceptions of information sources and information itself [3], [5]. As a result, one critical question that must be addressed today is whether new media in the digital realm introduce new factors that may concur with credibility assessment [6], [7].

In the Social Web, evaluating information credibility is concerned with the analysis of user-generated content [8], the characteristics of the authors, and the inherent nature of social media platforms, i.e., the social relationships connecting the entities involved.

These characteristics, or features, can be simple linguistic features associated with the UGC text, additional meta-data features associated with the content of a review or a tweet, or they can be extracted from the behaviour of users in social media, i.e., behavioural features, or they can be linked to the user profile (if available). Furthermore, various approaches have considered product-based features, as in the case of review sites where products and/or services are reviewed, or social features, which exploit the network structure and relationships connecting entities in social media platforms [9], [10].

Several approaches have been proposed in recent years to assess the credibility of information in the Social Web in an automatic or semi-automatic manner; in particular, the most investigated tasks have been the identification of: (i) opinion

spam in review sites [9], (ii) fake news in microblogging sites [11], and (iii) potentially harmful/inaccurate online health information [12]. In general, the majority of these approaches are data-driven, employing various models to classify UGC in terms of credibility.

III. PROBLEM STATEMENT

People write unworthy positive product reviews in order to promote them. In some cases, malicious negative reviews are given to other (competitive) products in order to harm their reputation. Some of these are non-reviews (e.g., advertisements and promotions) with no opinions about the product.

IV. PROPOSED METHODS

To address the major issue that online websites face as a result of opinion spamming, this project proposes to identify any such spammed fake reviews by classifying them as fake or genuine. Using the Nave Bayes, Linear SVC, SVM, Random Forest, and Decision Trees algorithms, the method attempts to classify reviews obtained from freely available datasets from various sources and categories such as service-based, product-based, customer feedback, and experience-based with greater accuracy. In order to improve accuracy, additional features such as sentiment comparison, verified purchases, ratings, emoji count, product category, and overall score are used in addition to the review details. Based on the classified training sets, a classifier is built using the identified features, and those features are assigned a probability factor or a weight. This is a supervised learning technique that employs various Machine learning algorithms to detect whether reviews are fake or genuine.

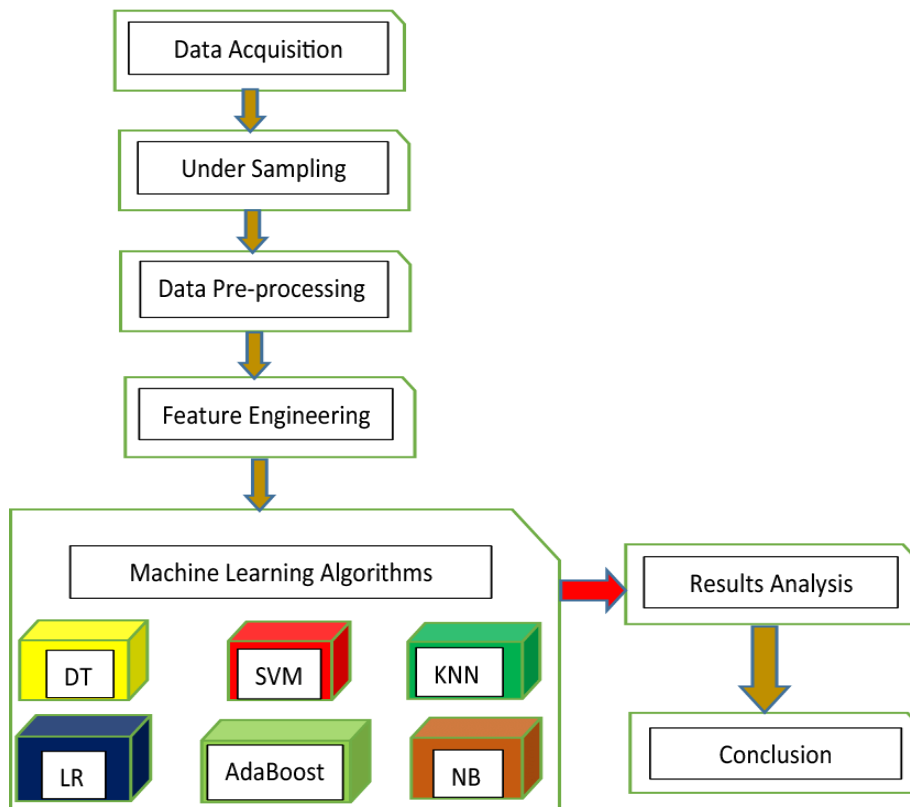


Figure: Processing Diagram

V. CONCLUSION

This paper proposed a semi-supervised approach for fast fake review identification by focusing on improving the detection efficiency of fake online reviews and reducing the reliance on training sets. In the review process, a time series model is first used to capture the suspicious intervals by investigating the burst patterns.

In this article, which focuses on the effectiveness of supervised classification, a feature analysis was performed to summarise the main review- and reviewer-centric features that are suitable for fake review detection, as well as to propose new features that can be particularly useful in detecting singleton reviews. To avoid the issues associated with the limited volume of available ground truths, an evaluation was conducted using a publicly available large-scale and general labelled dataset. The encouraging results obtained attest to the usefulness of the proposed study.

VI. FUTURE ENHANCEMENT

Although this model outperforms other traditional statistical methods, it still has some limitations that must be addressed in the future. (1) Limited data are used in the experiment due to their inaccessibility. (2) The feature selection is simple, particularly the sentiment factor consideration. Exploring and analysing more linguistic features, such as modifiers, negations, emojis, and ironic words, may help improve detection performance.

REFERENCES

- [1] N. Jindal and B. Liu, "Opinion spam and analysis," in Proceedings of the 2008 International Conference on Web Search and Data Mining".ACM, 2008, pp. 219–230.
- [2] M. Viviani and G. Pasi, "Credibility in Social Media: Opinions, News, and Health Information - A Survey," WIREs Data Mining and Knowledge Discovery, 2017. [Online]. Available: <http://dx.doi.org/10.1002/widm.1209>
- [3] C. S. Self, "Credibility", in An Integrated Approach to Communication Theory and Research, 2nd Edition, M. B. Salwen and D. W. Stacks, Eds. Routledge, Taylor and Francis Group, 2008, pp. 435–456. [Online]. Available: <http://dx.doi.org/10.4324/9780203887011>
- [4] B. J. Fogg and H. Tseng, "The elements of computer credibility," in Proc. of the SIGCHI Conf. on Human Factors in Computing Systems. ACM, 1999, pp. 80–87.
- [5] M. J. Metzger, A. J. Flanagin, K. Eyal, D. R. Lemus, and R. M. McCann, "Credibility for the 21st century: Integrating perspectives on source, message, and media credibility in the contemporary media environment," Annals of the International Communication Association, vol. 27, no. 1, pp. 293–335, 2003.
- [6] M. J. Metzger and A. J. Flanagin, "Credibility and trust of information in online environments: The use of cognitive heuristics," Journal of Pragmatics, vol. 59, Part B, no. 0, pp. 210 – 220, 2013,
- [7] Biases and constraints in communication: Argumentation, persuasion and manipulation. [Online]. Available: <http://www.sciencedirect.com/science/article/pii/S0378216613001768>
- [8] M.-F. Moens, J. Li, and T.-S. Chua, Eds., Mining User Generated Content, ser. Social Media and Social Computing. Chapman and Hall/CRC, 2014.
- [9] A. Heydari, M. aliTavakoli, N. Salim, and Z. Heydari, "Detection of review spam: A survey," Expert Systems with Applications, vol. 42, no. 7, pp. 3634–3642, 2015.
- [10] B. Carminati, E. Ferrari, and M. Viviani, "A multi-dimensional and event-based model for trust computation in the social web," in International Conference on Social Informatics. Springer, 2012, pp. 323–336.
- [11] C. Castillo, M. Mendoza, and B. Poblete, "Predicting information credibility in time-sensitive social media," Internet Research, vol. 23, no. 5, pp. 560–588, 2012.
- [12] T. J. Ma and D. Atkin, "User generated content and credibility evaluation of online health information: A meta analytic study," Telematics and Informatics, 2016.



INNO SPACE
SJIF Scientific Journal Impact Factor
Impact Factor: 8.165



ISSN INTERNATIONAL
STANDARD
SERIAL
NUMBER
INDIA



INTERNATIONAL JOURNAL OF INNOVATIVE RESEARCH

IN COMPUTER & COMMUNICATION ENGINEERING

 9940 572 462  6381 907 438  ijircce@gmail.com



www.ijircce.com

Scan to save the contact details