**Individual In-depth Report**

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**Evaluated by:** [Justin Young](mailto:jtyoun15@asu.edu)

**Date:** 09/16/23

**Tasks Assigned:**

* Review of Exploring and Detecting Opinion Spam on Social Media

**Summary:**

* This paper focuses on detection and analysis of opinion spam on social media along with development of a model to detect this type of spam.
* Opinion spam consists of comments posted on social media with the objective of misleading the public.
* In this research paper, two main steps are explained for opinion spam detection.
* The first step is the conduction of empirical quantitative analysis on opinion spam.
* The second step involves the proposal of a context-based classification method in order to detect opinion spam.
* The methods used in this paper purely take into account users who have engaged in opinion spam. Thus, the integrity of legitimate users is not compromised.
* Empirical analysis of opinion spam involves three main parts:
  + Linguistic Styles – Used to analyze and differentiate the linguistic features between legitimate users and opinion spam.
  + Content Analysis – This analysis is used to find the most common topics used by opinion spam and legitimate users in their tweets, thus differentiating between the two.
  + Social Network Analysis – Graph is constructed based on users in the dataset and the degree and number of edges in the graph is distinguished.
* Opinion spam detection is done based on features which could be of five categories – comment linguistic styles, tweet linguistic styles, comment behavior features, tweet behavior patterns, user profile features and context information.
* The classifier is created by constructing a graph composed of users. Two main features are added here – user’s opinion spam followers percentage and followees percentage. This is expanded to create a logistic regression classifier.
* The experiment results are analyzed using different methods, with each method generating different f1 scores. Along with this, average use of each word by legitimate users and opinion spam is found and differentiated based on percentage.
* In conclusion, effective analysis is done using the steps mentioned in the research paper.

**Outcome:**

This research paper brings into light the topic of exploration and detection of opinion spam in social media, with the use of empirical quantitative analysis, classification and detection. In addition to this, legitimate users are not incorrectly labeled as spam, thus not compromising their integrity.

**References** *(with citation)*

[31] Y. Xiao and J. Qiu, "Exploring and Detecting Opinion Spam on Social Media," 2020 Chinese Automation Congress (CAC), Shanghai, China, 2020, pp. 7570-7573, doi: 10.1109/CAC51589.2020.9327093.

**Evaluation of Report**

**Evaluation summary with justification.**

This study covers a process to detect opinion spam on social media in two steps: conduct an empirical analysis and construct a classification method to detect opinion spam. This paper also includes a performance analysis of methods and collects statistics on the average use of certain words by users.

**The quality of the major result(s) with justification.**  
This paper covers the importance of blocking out opinion spam on social media when it comes to ensuring security. The research in this study explains a straightforward method using machine learning to accomplish this.

**The usefulness of the paper to the overall project.**   
The research from this paper will help us understand a significant issue on social media using methods we’re focusing on.

**Other comments**

**Evaluation Approval  
  
Evaluation by:** [Justin Young](mailto:jtyoun15@asu.edu) **Date: 9/18/2023**

**Is the written report of the in-depth study complete with all the major result(s) of the paper(s)? If not, provide as many examples of the major result(s) missing in the written report as possible. (in bullet form). [Normally within 100 words]**

* Yes, the in-depth report contains the major results of the paper and it contains the gist and summary of the paper including the context and its motivation.

**Is each section of the guidelines sufficiently completed? If not, point out what is missing. [Normally within 40 words].**

Yes, each section of the guidelines are completed.

**Is the quality of this version of the written report satisfactory? If not, then why not? [Normally within 40 words]**

Yes, the quality of the written report is satisfactory

**Approval.  
  
Approved by:** [Gautham Vijayaraj](mailto:gvijaya6@asu.edu) **Date: 9/18/2023  
  
Is the quality of this written in-depth study report and Evaluation report satisfactory? If not, then why not? (limit: 40 words)**

Yes, the in-depth report and evaluation report is satisfactory.