## 

**Individual In-depth Report**

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**Evaluated by:** [Anuranjan Dubey](mailto:adubey37@asu.edu)

**Date: September 16th, 2023**

**Tasks Assigned:**

* In the previous weeks,I have been studying papers related to various types of suspicious activities that go on social media. This week I plan on diving deep into a type of suspicious activity which is spam accounts on social media.
* Studying the research paper "Machine learning based twitter spam

Account detection: a review” to address a new type of suspicious activity and methods to detect them.

**Summary:**

* The paper provides an overview of the growth and popularity of online social networks, emphasizing their importance for communication and social interactions. However, it also mentions the negative aspects, such as spamming, malware intrusion, and other malicious activities that can harm users and the platform's reputation.
* The paper highlights the negative impact of spam on Twitter, such as harming the reputation of the platform, disrupting the experience of genuine users, and posing economic and security threats to society. It points out that Twitter is filled with tens of millions of fake spam profiles, which can jeopardize the security and privacy of normal users.
* The authors of this paper state that the motivation for their study is to address the challenges of spam detection on Twitter and propose more efficient methods to detect spam accounts, especially in the early stages.
* They also mention that Twitter is particularly susceptible to spam attacks due to its open nature and the ease of posting short messages with links.
* They outline a general framework for spam detection using machine learning, which consists of two main phases:
* Training Phase: In this phase, a detection model is trained using labeled samples. These samples are classified as either spam or non-spam accounts. Features are extracted from the Twitter data, including statistical features, user-based features, content-based features, and more. Various classifiers such as Support Vector Machine (SVM), Decision Trees, Bayesian classifiers, and Random Forest are used in this phase.
* Testing Phase: After the model is trained, it is tested on unlabeled samples to classify each sample as spam or non-spam. The model's performance is evaluated using metrics like accuracy, detection rate, true positive rate,recall, precision, and F-measures.
* In summary, the paper discusses the prevalence of spam on Twitter, the challenges associated with spam detection, and the use of machine learning techniques to build models for identifying spam accounts.

**Outcome:**

The outcome of reading this paper is a review of machine learning-based techniques for Twitter spam account detection. The paper primarily focuses on analyzing existing approaches and challenges. It does not include a specific simulation or implementation with experimental data,but serves as a valuable reference for researchers in the field of spam detection on Twitter.

**References** *(with citation)*

[1] S. Gheewala and R. Patel, "Machine Learning Based Twitter Spam Account Detection: A Review," 2018 Second International Conference on Computing Methodologies and Communication (ICCMC), Erode, India, 2018, pp. 79-84, doi: 10.1109/ICCMC.2018.8487992

**Evaluation of Report**

**Evaluation summary with justification.**

The weekly report effectively summarizes most of the aspects of the research paper on detecting spam accounts on social media. It outlines the paper's context, highlighting the increasing importance of social media, the challenges posed by malicious activities, and the need for automated methods. Additionally, it touches upon data collection ethics, feature selection, and evaluation metrics.

**The quality of the major result(s) with justification.**  
The research paper provides a valuable review of machine learning-based techniques for Twitter spam account detection, offering insights into existing approaches and challenges.

**The usefulness of the paper to the overall project.**   
The paper's usefulness is in-depth exploration of machine learning methods for Twitter spam account detection, offering valuable insights for researchers.

**Other comments**

**Evaluation Approval  
  
Evaluation by:** [Anuranjan Dubey](mailto:adubey37@asu.edu) **Date: September 16th, 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]**

* The report effectively summarizes the paper's context, motivation, and methodology.
* It highlights the importance of social media, the challenges posed by malicious activities, and the need for automated methods.
* It discusses data collection, ethical considerations, and the relevance of features for spam account detection.

**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 is sufficiently completed.

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

Yes.

**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.