**Individual Report**

**Member name:** [Rahul Nayak](mailto:rrnayak@asu.edu)

**Evaluated by:** [Anuranjan Dubey](mailto:adubey37@asu.edu) [Gautham Vijayaraj](mailto:gvijaya6@asu.edu)

**Date: 10/30/2023**

**Tasks Assigned:**

* Creating Individual Progress Report and evaluating [Avani Mundra](mailto:amudra@asu.edu)’s Progress Report.
* Working on drafting the final report.
* Reviewed the not so important paper “A Framework to Predict Social Crime through Twitter Tweets By Using Machine Learning”.

**Summary:**

* The paper discusses the development of a framework for predicting different types of social media crimes, such as cyber stalking, cyber bullying, cyber hacking, cyber harassment, and cyber scams, using data obtained from Twitter.
* The framework consists of three modules: data pre-processing, a classifying model builder, and prediction. The authors use three machine learning algorithms, Multinomial Naïve Bayes, K-Nearest Neighbors, and Support Vector Machine, to classify the data into various crime categories.
* They also employ N-Gram language models to optimize the accuracy of the system. The results indicate that all three algorithms achieve high precision, recall, and F-measure, with Support Vector Machine performing slightly better.
* The proposed system demonstrates better accuracy compared to existing network-based feature selection approaches.
* In the context of detecting suspicious activity on social media, this paper presents a valuable approach that leverages machine learning and natural language processing to identify and classify different types of social media crimes on Twitter.
* By analyzing tweets and their content, the framework can help law enforcement and security agencies in monitoring and preventing potentially harmful activities on social media platforms
* Additionally, the authors suggest that this model could be extended to work in real-time and include additional crime categories, enhancing its efficiency and robustness in identifying suspicious behaviors on social media.

**Outcome:**

All of the tasks that needed to be completed this week, such as preparing and assessing individual progress reports, compiling the weekly report, contributing to the initial draft of the final report, and reviewing less critical research papers, were accomplished successfully.

**References** *(with citation)*

[1] Z. Abbass, Z. Ali, M. Ali, B. Akbar and A. Saleem, "A Framework to Predict Social Crime through Twitter Tweets By Using Machine Learning," 2020 IEEE 14th International Conference on Semantic Computing (ICSC), San Diego, CA, USA, 2020, pp. 363-368, doi: 10.1109/ICSC.2020.00073.

**Evaluation of Report  
  
Evaluation by:** [Anuranjan Dubey](mailto:adubey37@asu.edu) **Date:** 10/30/2023

**Is the weekly member report 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). [within 100 words]**

* The framework consists of three modules: data pre-processing, a classifying model builder, and prediction.
* The paper proposes extending the model for real-time use and including additional crime categories for enhanced efficiency and robustness.
* Yes, the member report is complete with all major results of the paper.

**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 **Approved by:** [Gautham Vijayaraj](mailto:gvijaya6@asu.edu) **Date: 10/30/2023**