**Individual Report**

**Member name:** [Avani Mundra](mailto:amudra@asu.edu)

**Evaluated by:**[Rahul Nayak](mailto:rrnayak@asu.edu)

**Date: 09/24/2023**

**Tasks Assigned:**

* Reviewed and wrote an in-depth report for the paper ‘A Framework to Detect and Prevent Cyberbullying from Social Media by Exploring Machine Learning Algorithms’.
* Prepared Group Weekly Report for the current week
* Prepared Group MidTerm Report
* Prepared Individual Midterm Review Report
* Evaluated [Yeshwanth Reddy Chennur](mailto:ychennur@asu.edu)’s individual progress report and in-depth report for the present week.

**Summary:**

* The research paper ‘A Framework to Detect and Prevent Cyberbullying from Social Media by Exploring Machine Learning Algorithms’ discusses in detail a key component of the project, i.e., leveraging machine learning models to identify suspicious content in social media and learn about information assurance and security related to it.
* The paper focuses on cyberbullying, which is a significant issue in the digital world, affecting users’ mental health and well being. The research aims to use Machine Learning (ML) techniques to detect and classify cyberbullying from social media data and proposes a prevention framework.
* Two models are developed: a bully identification model (classifying text as positive or negative sentiment) and a bully classification model (classifying bullies into categories like racism, offensive, etc.).
* Performance evaluation measures include precision, recall, and F1 score, with Random Forest using TF IDF showing the best performance.
* All other tasks have also been successfully completed. This involved preparation of a weekly report with exhaustive summary of all tasks performed during the present week by group members, preparation of midterm review and group report according to guidelines and evaluation of reports of another group member.

**Outcome:**

The evaluation of the models revealed that the Random Forest algorithm using TFIDF embedding outperformed other methods, achieving an F1 score of 80.8% for bully identification and 58.4% for bully classification, indicating its effectiveness in detecting and categorizing cyberbullying on Twitter.

**References:**

[17] S. Mitra, T. Tasnim, M. A. R. Islam, N. I. Khan and M. S. Majib, "A Framework to Detect and Prevent Cyberbullying from Social Media by Exploring Machine Learning Algorithms," 2021 International Conference on Computer, Communication, Chemical, Materials and Electronic Engineering (IC4ME2), Rajshahi, Bangladesh, 2021, pp. 1-4, doi: 10.1109/IC4ME253898.2021.9768450.

**Evaluation of Report  
  
Evaluation by:** [Rahul Nayak](mailto:rrnayak@asu.edu) **Date: 9/24/2023**

**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 weekly member report is finished and includes all the primary tasks designated to the member, along with a comprehensive summary of a reference paper that highlights its key findings.

**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 sufficiently 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 and sufficient. **Approved by:** [Krupaben Kothadia](mailto:kkothadi@asu.edu)

**Date: 09/25/2023**