**Individual Report**

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

**Evaluated by:** [Gautham Vijayaraj](mailto:gvijaya6@asu.edu)[Krupaben Kothadia](mailto:kkothadi@asu.edu)

**Date: 09/17/2023**

**Tasks Assigned:**

* Completed the in-depth report of the paper ‘An approach to detect abusive content incorporating Word2Vec and Multilayer Perceptron’.
* Initiated review of the paper ‘TargetVue: Visual Analysis of Anomalous user Behaviors in Online Communication systems’.
* Evaluated [Yeshwanth Reddy Chennur](mailto:ychennur@asu.edu)’s individual progress report and in-depth report for the present week.

**Summary:**

* In the context of studying the project scope of leveraging machine learning models to detect suspicious activities in social media and associate information assurance and security with it, reviewed the research paper ‘An approach to detect abusive content incorporating Word2Vec and Multilayer Perceptron’ in detail and drafted an in-depth report for the same.
* The paper ‘An approach to detect abusive content incorporating Word2Vec and Multilayer Perceptron’ gave insights on identifying the most appropriate embedding layer and model to detect hate speech in Twitter dataset.
* The paper ‘TargetVue: Visual Analysis of Anomalous User Behaviors in Online Communication Systems’ talks about analyzing fraudulent behavior in social media, an important domain of the project as highlighted in the project scope.
* Anomalous user behaviors in online platforms are a societal threat.Advanced machine learning techniques are used for automated anomaly detection, but obtaining ground truth data is challenging.
* The paper introduces "TargetVue," a visual analysis system for detecting anomalous users through unsupervised learning.
* TargetVue uses ego-centric glyphs to summarize user behaviors, communication activities, features, and social interactions.The system is demonstrated in a social bot detection challenge, email records case study, and expert user interview.

**Outcome:**

Evaluation shows TargetVue's effectiveness in detecting users with anomalous communication behaviors. Future plans include automating anomaly detection model tuning, integrating active learning methods, and conducting a formal user study to assess system usability.

**References:**

[15] S. Ghosal, A. Jain and D. K. Tayal, "An approach to detect abusive content incorporating Word2Vec and Multilayer Perceptron," *2022 IEEE Bombay Section Signature Conference (IBSSC)*, Mumbai, India, 2022, pp. 1-5, doi: 10.1109/IBSSC56953.2022.10037274.

N. Cao, C. Shi, S. Lin, J. Lu, Y.-R. Lin, and C.-Y. Lin, “TargetVue: Visual Analysis of Anomalous user Behaviors in Online Communication systems,” *IEEE Transactions on Visualization and Computer Graphics*, vol. 22, no. 1, pp. 280–289, Jan. 2016, doi: 10.1109/tvcg.2015.2467196.

**Evaluation of Report  
  
Evaluation by:** [Gautham Vijayaraj](mailto:gvijaya6@asu.edu) **Date: 9/18/2023**

**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]**

Yes, the weekly member report is complete with all the major tasks assigned to the member along with an in-depth report of a reference paper with major results.

**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: 09/18/2023**