## *Disclaimer: The following document is intended to provide general guidance on the use of this template. Please refer to the template for the specific format and content requirements. You may also add additional information to the template as needed for your specific progress.*

**Individual Report**

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

**Date: 10/22/2023**

**Tasks Assigned:**

* Preparation and Evaluation of Individual Progress Reports
* Read not-so important papers

**Summary:**

* Read the Not so important papers [1] and [2] that was a task assigned to all team members
* Evaluated [Avani Mundra](mailto:amudra@asu.edu)Individual progress reports.
* The paper [2] explores the role of Online Social Networks (OSNs) in facilitating global connections but highlights the escalating security threats in the digital realm.
* OSNs' convenience has led to widespread use for sharing personal, political, and professional information, making users vulnerable to data breaches.
* Consequently, researchers are increasingly focused on safeguarding individual privacy and security on OSNs. To combat malicious fake profiles, the study employs machine learning techniques, including Support Vector Machine (SVM), Deep Neural Network (DNN), and Random Forest, to automatically detect millions of fake profiles.
* DNN stands out with a 96% accuracy rate. The paper concludes with the aim to enhance detection techniques and introduce new features for future security improvements.
* This survey paper[1] provides a comprehensive overview of machine learning (ML) and data mining (DM) methods as applied to cyber analytics, particularly in the context of intrusion detection.
* The paper highlights the significance of cyber datasets used in ML/DM and addresses the complexity of ML/DM algorithms
* The paper emphasizes the need for ML and DM methods in the cyber domain, both for misuse and anomaly detection, but notes the absence of a universally effective method. It underscores the importance of quality training and testing datasets, including network and kernel-level data.
* The paper also highlights unique challenges in the cyber realm, particularly the frequent need for model retraining. It suggests that researching fast incremental learning methods for daily model updates in misuse and anomaly detection represents a promising avenue for further investigation

**Outcome:**

Thus the outcome of reading these papers In the context of detecting suspicious activities on social media is that these papers emphasize the importance of high-quality datasets, the complexity of machine learning and data mining algorithms, and the need for continual model retraining.

**References** *(with citation)*

[1] Anna L. Buczak, Erhan Guven, "A Survey of Data Mining and Machine Learning Methods for Cyber Security Intrusion Detection," in IEEE Communications Surveys & Tutorials, vol. 18, no. 2, pp. 1153 - 1176, 26 October 2015, doi: 10.1109/COMST.2015.2494502.

**[2]** T.R Soumya, S.Solai Manohar, N.Bala Sundara Ganapathy, Leema Nelson, A. Mohan, M.Thurai Pandian. "Profile Similarity Recognition in Online Social Network using Machine Learning Approach" in International Conference on Inventive Research in Computing Applications (ICIRCA), 29 December 2022, Pages 805-809. ISSN 22473631 doi:10.1109/ICIRCA54612.2022.9985683

**Evaluation of Report  
  
Evaluation by:** [Anuranjan Dubey](mailto:adubey37@asu.edu) **Date:** 10/23/2023

**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, Major results from the paper [2] are mentioned, focusing on the use of machine learning techniques (SVM, DNN, Random Forest) for detecting fake profiles. DNN's 96% accuracy rate is highlighted.
* The paper [1] is discussed, emphasizing the importance of high-quality datasets and the complexity of ML/DM algorithms.

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

Yes, the sections of the guidelines are sufficiently completed with relevant information from the papers.

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

Yes, the quality of this version of the written report is satisfactory.

**Approved by:** [Gautham Vijayaraj](mailto:gvijaya6@asu.edu) **Date:** 10/22/2023