**Individual In-depth Report**

**Member name:** [Gautham Vijayaraj](mailto:gvijaya6@asu.edu)

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

**Date: 10/16/2023**

**Tasks Assigned:**

* Focus on my question to work upon as my area of research for this project.
* The question I chose was to do my research and find a system that maintains the balance between detecting suspicious activity in social media and safeguarding the user's privacy and maintaining data integrity.
* Review of [**Intelligent Data Mining Technique of Social Media for Improving Health Care**](https://drive.google.com/file/d/1-Sxd7wjjOK7qvZ-ep3tkkYA4QwF1nVhf/view?usp=drive_link)

**Summary:**

* The paper introduces an innovative approach to harness the power of social media for healthcare improvement, with a specific focus on cancer-related information.
* The primary objective of this research is to use intelligent data mining techniques to extract valuable insights from user-generated content on social media platforms, ultimately enhancing healthcare outcomes.
* The proposed system establishes a dedicated forum where users can openly discuss their cancer treatments, share their experiences, and seek guidance.
* Key components of this approach include:
  + **Data Collection:** The system collects data from a cancer-specific forum as well as live tweets related to cancer treatments. This raw data serves as the foundation for subsequent analysis.
  + **Text Processing:** To facilitate analysis, text processing techniques like the removal of common stop words and text stemming are applied. This step prepares the data for deeper exploration.
  + **Pattern Taxonomy:** Large documents are broken down into smaller, more manageable paragraphs. The system then extracts terms related to positive and negative sentiments from these paragraphs.
  + **Sentiment Analysis:** Using a predefined dictionary of positive and negative words, the system assesses user sentiments in their posts. This analysis helps in determining the satisfaction or dissatisfaction of users with their cancer treatments.
  + **Symptoms and Medication Identification**: The system identifies symptoms related to cancer and associates them with specific medications. A dedicated dictionary of symptoms is employed, and expert medical advice is used to compile a list of medications based on reported symptoms. This valuable information is stored in the system's database.
* The results obtained from this approach go beyond traditional sentiment analysis by incorporating the identification of symptoms and their corresponding medications.
* By providing users with a comprehensive view of their treatment options, the system empowers patients to make informed decisions about their cancer care. Furthermore, it offers insights into the effectiveness of different treatments, benefiting both patients and healthcare providers.

**Outcome:**

* This research presents a groundbreaking method for extracting and analyzing healthcare-related information from social media, with a particular emphasis on cancer treatments.
* The overall project requires data mining techniques which are efficient to detect suspicious activities. The approach discussed in this paper contributes to that goal as well and can hence be implemented.

**References** *(with citation)*  
  
[45] Sopan Ganpat Sutar, "Intelligent data mining technique of social media for improving health care," in International Conference on Intelligent Computing and Control Systems (ICICCS), pp. 1356-1360, June 2017, doi: 10.1109/ICCONS.2017.8250690.

**Evaluation of Report**

**Evaluation summary with justification.**

The study offers a fresh take on using social media to spread cancer awareness in the healthcare industry. Data collecting, text processing, behavior analysis, and symptom-medication identification are important elements. To derive insights from user-generated information, data mining is utilized. This strategy might work well for our project.

**The quality of the major result(s) with justification.**  
The approach discussed here worked really well for the clinical application where it's expected to have variability in the data, so it can be predicted that the approach will produce good results on our project.

**The usefulness of the paper to the overall project.**   
This data mining approach will be useful to address the variability in the data.

**Other comments**

The report is very well written.

**Evaluation Approval  
  
Evaluation by:** [Krupaben Kothadia](mailto:kkothadi@asu.edu) **Date: 10/16/2023**

**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 of the comprehensive study provides a thorough synopsis of the research findings. It offers a novel method of using social media for medical purposes, emphasizing data pertaining to cancer. In order to improve healthcare outcomes, this strategy uses effective data mining algorithms to extract insights from user-generated information. The study addresses the establishment of a specific forum for talking about cancer therapies and lists essential elements like collecting data, text processing, sentiment analysis, and symptom-medication matching. This methodology is helpful for the "Detection of Suspicious Activities in Social Media" study because it gives patients the power to make decisions about their care and offers insightful information about how well treatments work.

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

**Approval.  
  
Approved by:** [Krupaben Kothadia](mailto:kkothadi@asu.edu) **Date: 10/16/2023  
  
Is the quality of this written in-depth study report and Evaluation report satisfactory? If not, then why not? (limit: 40 words)**

Yes, the report is evaluated by me and the report has been studied carefully with all the remarks added in the evaluation report. The quality of this written in-depth study report and evaluation report is satisfactory.