**Reflective Report**

1. Description

I received an assignment in October to complete a research paper, which was due in February. Initially, I chose to work on the topic of mobile user behaviors and spent about a month researching it. However, I realized that I didn’t find it interesting, so I decided to change my topic to fake news detection using text mining. This shift made the process more challenging as I had to start over with a new topic and research direction. Balancing this report alongside other subjects was difficult, but I managed to organize my time and complete the research within the given deadline.

2. Feelings

I felt excited when starting the research because I had the opportunity to work on an important subject with impact. I encountered difficulties mainly because the course ran as an online platform which produced less effective discussion compared to face-to-face classes. The beginning of my analysis with research papers was overwhelming because numerous papers had restricted access with subscription requirements. Reviewing academic sources for the first time became confusing since it marked my start in reviewing academic sources critically. Through practice I reached a better understanding of how to handle research papers. The research process introduced me to stronger abilities for managing research approaches together with data analysis and conclusion interpretation.

3. Evaluation

Many obstacles appeared during my research process. The primary problem I faced was the lack of experience in research paper writing because it marked my first research paper, and I did not understand the thorough requirements. Another challenge was time management—the research required extensive reading, analyzing multiple sources, and refining my approach, all while balancing other courses.

My academic research during the first phase involved applying quantitative approach to perform text mining then statistical analyses for detecting fake news. Future research on this topic could achieve better results through the combination of quantitative numerical analysis with qualitative data collection methods. The modified Onion Model needs to combine both deductive and inductive reasoning strategies through expert and journalistic and news consumer qualitative data collection. Such modifications would make findings more profound along with enhancing their validity while providing an extensive method for fake news detection.

4. Analysis

The research process would be improved through various enhancements to overcome the challenges encountered. A mixed-question research design embracing interviews with journalists together with fact-checkers and news analysts should have enriched the data collection process. Increasing outreach efforts for the survey, such as distributing it through social media or collaborating with organizations, might have boosted response rates. The research process would have benefited from having access to both open-access research databases as well as restricted papers through institutions for conducting a comprehensive literature review.

The research methodology should be improved by adding sentiment analysis and deep learning model technology (such as BERT) for text sorting capabilities. A more advanced assessment approach for fake news language would be possible when using this method. The analysis of multimedia misinformation utilizing AI-based models for both image and video content would improve the practical value of this study.

For data analysis, I used Google Forms to collect survey responses and Python for processing secondary data. In the future, using advanced visualization tools (Tableau, Power BI) would improve data interpretation and presentation.

5. Conclusion

After conducting my research, I realized flexibility in methodology together with accessible resources will produce superior outcomes in scientific work. Future research will implement mixed methods to obtain better understanding regarding misinformation patterns. The research would expand its data variety through the inclusion of regional and multilingual information sources. The elimination of multimedia misinformation needs immediate attention because fake news becomes more diverse.

The main obstacle during my research was limited access to literature review documents. I will examine different academic databases in my next research project together with partnering university libraries or searching for scholarly journals with open access in the following academic inquiry. The survey's response rate can improve through strategic recruitment techniques that should include working with research institutions along with social media advertising. My research will benefit from analysis of videos and pictures and audios and enhanced visualization tools.

Overall, this research provided valuable experience in data analysis, text mining, and understanding the complexities of misinformation. By making strategic improvements, future studies can offer more comprehensive insights into fake news detection.

6. Action Plan

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\*Parts in **bold** are the modified parts

The following strategy has been developed to enhance research performance in upcoming projects based on the reflection process:

I will improve data collection by implementing a combination of qualitative interviews alongside professional news personnel with increased distribution of surveys across multiple platforms and by employing substantial datasets that span different geographic areas and linguistic backgrounds. The research will be developed through three major improvements which involve multimedia fake news analysis of images and videos and implementation of BERT and sentiment analysis methods alongside advanced visualization tools including Tableau and Power BI.