Understanding Social Media Dynamics : A Big Data Analytics Framework for Cross-Platform Content Analysis

Mrunal Vinay Jadhav

University of Maryland Baltimore County

DATA 603 Platforms for Big Data Processing

Dr. Najam Hassan

February 10, 2025

Abstract

Nowadays, there are numerous social media platforms which have a huge number of users along with the data generated through it every second. To understand the details and evolving dynamics of these social media platforms it may require a high framework which is fast. Along with this the need of integrating big data analytics for analysing the data and making it efficient to get meaningful insights from the content will help gaining a deep understanding on how the social media works, how that data can be used to drive insights, what is the future of the businesses and research included, and how we can make data driven decisions through it. Through this paper we can look into how big data analytics helps us to analyze social media platforms like Instagram, Facebook etc. Use of various methodologies like data collection, sentiment analysis, and predictive modeling using ML to get a holistic approach on understanding the current trends, user behaviour, and how data widely spreads on platforms. Getting access over the data is a complex process too as it concerns protecting the users privacy, ethical rules and the restrictions set by the platforms for collecting data. We are going to look into these platforms content analysis, study user interactions, and how it is relevant to mental health. This will derive the necessity of understanding data collection and the methodologies and integrating big data analytics in real time to gather intelligence over social media research.

References

Chen, Y., Sherren, K., Kyung Young Lee, McCay-Peet, L., Xue, S., & Smit, M. (2024). *From theory to practice: insights and hurdles in collecting social media data for social science research.* https://doi.org/10.3389/fdata.2024.1379921

Tušl, M., Thelen, A., Marcus, K., Peters, A., Shalaeva, E., Scheckel, B., Sykora, M., Elayan, S., Naslund, J. A., Shankardass, K., Mooney, S. J., Fadda, M., & Gruebner, O. (2022). *Opportunities and challenges of using social media big data to assess mental health consequences of the COVID-19 crisis and future major events.* https://doi.org/10.1007/s44192-022-00017-y

Chaudhary, K., Alam, M., Al-Rakhami, M. S., & Gumaei, A. (2021). *Machine learning-based mathematical modelling for prediction of social media consumer behavior using big data analytics.* Journal of Big Data, 8(1). https://doi.org/10.1186/s40537-021-00466-2