Reducing Uncertainty Caused by Social Noise on Social Media Platform

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ABSTRACT

Social noise and social entropy are two concepts that have been the subject of studies in the last two decades (Bruno, 2010; Matei et al., 2010; Alsaid et al., 2020; Alsaid & Pampapura, 2022; Pampapura et al., 2022). Studies that discussed misinformation, fake news, conspiracy theories, controversies, and disinformation also focused on certain aspects of social noise (Romer & Jamieson, 2020: Van Prooijen & Douglas, 2018). In this study, social noise refers to users intentionally or unintentionally participating in creating, disseminating, or spreading misinformation on social media. Recent studies have identified six characteristics or constructs of social noise. The six constructs identified by the recent studies include image curation, relationship management, cultural agency, conflict engagement, affiliation & politics, and norms & beliefs. In this study, we use the constructs to quantify and measure social noise using entropy and uncertainty reduction theory. The study focuses on two questions. How do we measure entropy as a degree of uncertainty caused by social noise? How does reducing uncertainty and social noise contribute to reducing the spread of misinformation? The primary analysis indicated that entropy as a measure of disorders of a tweet 1.5. This result is in line with the results produced by Son et al. (2019). Sentiment analysis results show that 66.6% of the tweets are subjective, while 33.4% of the tweets are objective (facts). Topic modeling results also indicated the presence of keywords that are characteristics of social noise constructs in the dataset.

RFERENCES

Alsaid, M., & Madali, N. P. (2022). Social Noise and the Impact of Misinformation on COVID-19 Preventive Measures: Comparative Data Analysis Using Twitter Masking Hashtags. Journal of Information & Knowledge Management, 21(Supp01), 2240007. Babel Street. (2022).

Misinformation & disinformation explained. Babel Street. Retrieved September 28, 2022

- Bruno, A. G. (2010). Algebraic entropy of generalized shifts on direct products. Communications in Algebra, 38(11), 4155-4174.
- Matei, S. A., Bruno, R. J., Faiola, A., & Morris, P. L. (2010). Visible effort : A social entropy methodology for managing computer-mediated collaborative learning. Paper presented at the Global Communication Forum, Jiao Tong University, Shanghai
- Pampapura Madali, N., Alsaid, M., & Hawamdeh, S. (2022). The impact of social noise on social media and the original intended message: BLM as a case study. Journal of Information Science. https://doi.org/10.1177/01655515221077347.
- Romer, D., & Jamieson, K. H. (2020). Conspiracy theories as barriers to controlling the spread of COVID-19 in the US. Social science & medicine, 263, 113356.
- van Prooijen, J. W., & Douglas, K. M. (2018). Belief in conspiracy theories: Basic principles of an emerging research domain. European journal of social psychology, 48(7), 897-908.
- Son, J., Lee, J., Larsen, K. R., & Woo, J. (2020). Understanding the uncertainty of disaster tweets and its effect on retweeting: The perspectives of uncertainty reduction theory and information entropy. Journal of the Association for Information Science and Technology, 71(10), 1145-1161.

ALISE RESEARCH TAXONOMY TOPICS

data visualization; information use; social computing; social media; sociology of information.

AUTHOR KEYWORDS

Communication; entropy; social media; social noise; uncertainty

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DOI: https://doi.org/10.21900/j.alise.2023.1350