A comprehensive framework for predicting public opinion by tracking multi-informational dynamics

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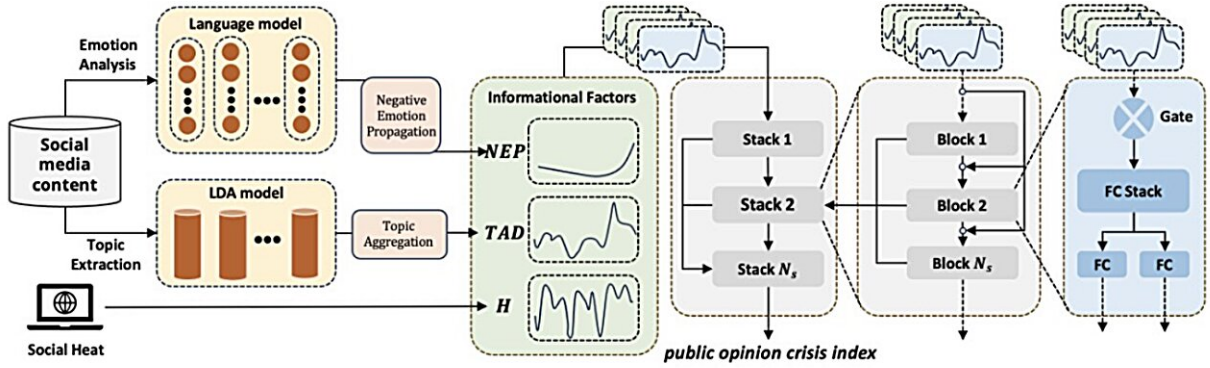

The framework of MIPOTracker. Credit: *Frontiers of Computer Science* (2024). DOI: 10.1007/s11704-024-3873-y

In the digital landscape, trivial rumors can spark significant online reactions. Accurate prediction of public opinion is important for crisis management, misinformation mitigation, and fostering public trust. However, existing methods often fail to thoroughly investigate multiple informational factors and their timely interactions, thereby limiting their efficacy in analyzing public opinion.

To address this gap, a research team led by Mintao Sun published their new research on 15 August 2024 in *Frontiers of Computer Science*. The

team proposed a novel framework, MIPOTracker, designed to predict public opinion crises by tracking multiple information factors.

This study proposes a novel multi-informational public opinion crisis prediction frame MIPOTracker. It uses Latent Dirichlet Allocation (LDA) and a Transformer-based language model to analyze topic aggregation degree (TAD) and negative emotions proportion (NEP) in public opinion.

The public opinion crisis model MIPOTracker is formed by integrating TAD and NEP with discussion heat (H) into a time-series model. An external gating mechanism is introduced to enhance it by controlling the influence of extraneous factors.

This study introduced the MIPOTracker model for predicting public opinion crises. It innovatively includes multiple pieces of information like themes, emotions, and popularity, improving the model's representation of public opinion events.

The experiment results confirm that multi-informational factors significantly influence public opinion development. Predicting public opinion trends is complex and involves factors like event types, which the researchers aim to explore in future research.

More information: Mingtao Sun et al, A comprehensive framework for predicting public opinion by tracking multi-informational dynamics, *Frontiers of Computer Science* (2024). DOI: 10.1007/s11704-024-3873-y

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