Discussion Leader Papers

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1 EXPLOITING MULTI-DOMAIN VISUAL INFORMATION FOR FAKE NEWS DETECTION [2]

Most earlier work exploring the automated detection of fake news in social media focus primarily on textual features. Furthermore, few prior image-based detectors utilize photo characteristics at both the physical (frequency domain) and semantic (pixel domain) level. Therefore, this paper uses a CNN-RRN network to extract features at both levels and then uses an attention mechanism to fuse the features together. Finally, a softmax layer classifies images into two classes - fake news image or real-news image. Their model saw noticeable improvements when compared to previous approaches.

This paper is pretty clear and concise and has a real-world application that makes it an interesting read. Future works have also built upon this model and have used it as a baseline for performance comparisons. In general, it's a good introductory paper to image forensics.

2 BURSTY EVENT DETECTION IN TWITTER STREAMS [1]

This paper strives to detects new "bursts" in a topic discussed on social media. This can be applied to gather more information about emergency situations and/or better understand trending topics. Their strategy is to extract temporal, user and textual features from tweets and then cluster similar tweets together. By analyzing how these clusters grow and change over time, their algorithm can detect sudden bursts, indicating a new/renewed interest in a topic, likely correlated with some event. This method was unique at the time because it could detect events in real-time.

This paper is much longer although figures and tables make up much of this added length. Overall, it's a relatively easy read and uses an interesting approach to real-time event detection. It guided many future works in this domain as well.

REFERENCES

[1] COMITO, C., FORESTIERO, A., AND PIZZUTI, C. Bursty Event Detection in Twitter Streams. *ACM Trans. Knowl. Discov. Data 13*, 4 (Aug. 2019), 41:1–41:28.
[2] JIN, Z., CAO, J., GUO, H., ZHANG, Y., AND LUO, J. Multimodal Fusion with Recurrent Neural Networks for Rumor Detection on Microblogs. *ACM Multimedia* (2017).

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