A Large-Scale Study of Social Media Sources in News Articles

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Motivation

Widespread use of social media content as source
- Journalists quote and paraphrase contents from social media pages regularly.
- “Convenient, cheap and effective” news source. [Marcel Broersma and Todd Graham. 2013]

Lack of research on social media sourcing practice
- No large scale analysis on the extent to which news media use social media as news source.
- Experiment on sourcing practice focusing US media is absent.

Systematic analysis will be beneficial
- To explain how social media becomes a primary source.
- To understand the role of social network used by news media in spreading misinformation.

Research Questions

- **RQ1:** How often do mainstream and unreliable news websites use Facebook and Twitter content in articles?
- **RQ2:** To what extent do mainstream and unreliable news media process Facebook and Twitter content used in articles?
- **RQ3:** Does the use of social media source vary for different news topics?

Data Collection

- Curated Facebook posts dated from January 1, 2013 to December 31, 2017

Extraction of Social Media Source

- Identified 212 (Facebook: 134, Twitter: 78) citation patterns.
- Developed a regex based classifier using the patterns.
- Categorized the source usages into - Quotation, Paraphrase and Embedding

RQ2: Social Media Content Processing

- Mainstream media uses more Quotation than Paraphrases.

RQ3: Relation with News Topic

- Processing of social media sources in different news topics

Social media content usage as a source by mainstream and unreliable media

Performance of Social Media Source Identification

- Precision: 89.80%, Recall: 73.33%, F1: 86.21%
- Quotation
- Paraphrase: 94.34%, 79.37%, 88.73%
- Embedding: 100%
- Macro-average: 94.71%, 84.23%, 88.98%
- Micro-average: 97.83%, 92.62%, 95.46%

Most Frequent Twitter and Facebook Patterns

- Table showing the performance of Social Media Source Identification

Social Media Source vs. all direct quotations

Processing of social media sources in different news topics

- Table showing the processing of social media sources in different news topics

Social Media Source usage in the top-5 news topics for each media