

Manually Classified Real and Fake News Articles

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Abstract—News articles that are written with an intent to deliberately deceive or manipulate readers are inherently problematic. These so-called ‘fake news’ articles are believed to have contributed to election manipulation and even resulted in severe injury and death, by actions that they have triggered. Identifying intentionally deceptive and manipulative news article and alerting human readers is key to mitigating the damage that they can produce. The dataset presented in this paper includes manually identified and classified news stories that can be used for the training and testing of classification systems that identify legitimate versus fake and manipulative news stories.

Keywords—*fake news, information warfare, deceptive news, manipulative news, election manipulation*

I. SUMMARY

Deliberately deceptive news content (more commonly known as ‘fake news’) presents information that is meant to misinform the public. Fake news articles have been blamed for influencing elections [1] and even causing injury and death [2]. In order to achieve their authors’ goals, deceptive articles must incorporate similar characteristics to those of real news stories. However, in many cases misinformation is quite exaggerated or otherwise designed to entice readers to read it (this is commonly known as click bait).

Many deceptive news outlets use clickbait in order to gain an enormous number of viewers. Fletcher, et al. [3] have demonstrated this through their efforts to characterize the reach of deceptive content in Europe, in particular. However, due to their attractive intent, there is often misinformation involved with clickbait to make stories and headlines seem more interesting than they would otherwise be. Glenski, et al. [4] have proposed a technique, targeted towards Twitter posts, for characterizing the level of clickbaiting included.

Beyond clickbait, a variety of studies have focused on the detection of fake news [5]. The most basic techniques for detecting fake articles include analysis of language [6], [7], identifying “satirical cues” [8] and (particularly political) fact checking [7]. Kim, et al. [9] have proposed using crowdsourcing for fake news article detection. Others [10], [11] have proposed automated detection techniques, which are critical to detecting the high-speed spread of some deceptive content, particularly content spread by bots [12]. Models for propagation and detection [13] and early warning systems [14] have been developed. Social media has been an area of particular focus [15], [16].

In order to test systems that have been developed to detect fake news, a database of articles for testing is required. Rubin, et al. [17] have proposed the beginning of a nomenclature for fake and non-fake articles, to aid in this. Wang [18] created a dataset of statements that are classified as to their accuracy. Each includes a justification for this classification. A smaller statement dataset was also created by Vlachos and Riedel [19] that similarly contained only classified statements. Thorne, et al. [20] produced a dataset with nearly 200,000 claims. Shu, et al. [21] produced a similar (in entry size) dataset containing hundreds of thousands of tweets. Datasets have also been created in various languages [22] other than English, demonstrating the global reach of this problem.

This paper presents a dataset that is designed to facilitate tools to automatically detect or classify fake news items. It includes numerous fake and real news articles. All of these articles are in a news format and have been curated from over 40 online sources, ranging from small fake news sites to well known newspaper websites. All of the articles have been manually classified and validated, to facilitate their use in training classifiers.

This dataset:

- Includes over 200 news articles that have been manually classified and validated
- Contains approximately the same amount of real and fake articles.
- Includes a truth (fake versus real) classification as well as an ideological classification
- Facilitates the testing of systems that are designed to detect fake news, validate real news articles or classify news articles into fake versus real categories
- Facilitates analysis that compares fake versus real and ideological classifications
- Facilitates supervised learning system development, training and testing by providing human classifications for all articles

II. DATA DESCRIPTION

This article describes a dataset that can be used to develop, train, test and evaluate the performance of systems that classify news-style articles into fake versus real categories. It also has

human-assessed and validated ideological classifications allowing it to be used to validate systems that classify news article ideology and systems that combine or use ideology in the assessment of news truth or falsity. Only politically themed articles are appropriate for ideological classification. As such, not all articles include an ideological classification.

The dataset includes 236 unique articles of which 122 are classified as real and 114 are classified as false. The articles were curated from over 40 online sources ranging from small ideologically-centered pseudo-news sites to the websites of well-known large newspapers. All of the articles were manually reviewed and classified as real or fake as well as classified by their ideology. Each initial truth versus falsity and ideological classification was, additionally, reviewed before the article’s inclusion in the database.

The data is stored in a comma separated value (CSV) file that can be used in most modern spreadsheet software and web-based systems. The file contains the article title, source, authors, URL and classifications. Table 1 lists all of the fields in the dataset and describes their format and contents.

Table 1. Data collected for each article.

Data Field	Description
ID	Numeric (integer) ID that is unique to each article in the database. This is used to uniquely identify each article.
Source	The name of the publication source of the article in string format.
URL	The URL of the article in string format.
Title	The title of the article in string format.
Authors	A list of the authors of the article in string format. Multiple author names are separated by semicolons.
Ideology	Numeric identifier (integer) that indicates the ideology of the article.
Accuracy	Binary (true / false) indicator of the accuracy (fake or real) of the article.
Researcher	Identifier (string) for the researcher that identified and performed the initial classification of the article.

III. METHODS

To collect the data, team members identified articles on a number of topics and then manually reviewed each article to ascertain whether it was real or fake and classified its ideology. The team systematically classified fake news by looking for certain characteristics that, approximately 75% of the time, proved to work. Those included spotting quotes in headlines, exclamation points, and capitalized letters in headlines. The body of the article was also reviewed and reviewer would look for indications of sloppiness such as run on quotes, and quotes

with no attribution. Researchers also identified fake articles is by looking up the article’s headline in a news search engine and comparing that article to articles written on the same topic by widely trusted national news sources. Meeting some or all of the foregoing, however, was not always indicative of an article being fake. Each article was manually reviewed in totality to arrive at a final classification. In particular, some of the articles that were gathered and thought to be fake were not intended to be deceptive, instead they were just satirical.

A. Team Member Instructions

The members of the identification and classification team were given instructions regarding the selection and classification of news articles. In terms of selection, team members were asked to choose from broad (political and non-political) areas and to minimize the number of articles selected about any one target.

Team members were also given guidelines for article classification (as fake or non-fake). They were told to look for key structural characteristics common to fake news (including run on quotes, capitalized words in headline and such). They were also told that if more than one of those key characteristics, it is more likely that the article is fake. Fundamentally, though (even considering the foregoing), each decision is made holistically by the team member based on an assessment of the truth or falsity of the content of the article and its style and method of presentation.

Once an article has been classified as real or fake, the team member must next determine the ideology of the article. Each team member is instructed to go through the body of the article, the title of the article and the news source to identify the ideology. Ideology is only assigned for politically themed articles (so some articles in the dataset do not contain an ideology classification). Ideology classifications include:

- Alt-Right
- Conservative
- Neutral
- Liberal
- Alt-Left

B. Validation of Classifications

The final step in the process of adding items to the dataset is validation. All items in the dataset must be reviewed by other team members to ensure consistency of classification. In most cases, this review was performed during team meetings. In other cases, additional team members reviewed additions on an ad-hoc basis. Only articles where agreement could be reached as to its primary classification (fake or real) and (if applicable) ideology classification were retained in the dataset.

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