A Framework for Understanding the Impact of Perspective on Classification of Fake News

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Abstract. This paper explores potential use of a classification scale to enable a reader holding an individual perspective to use news stories from sources with perspective that might, or might not be the same as the reader.

Keywords: Fake News, Data Analytics, Bayesian Belief Nets.

1   Extended Abstract

A question has long given pause to those trying to plan future activities. The question, "What is truth?" has been answered by a plethora of philosophers [1], social planners [2], and marketing execs [3] over the years in a manner best suited to the context the question was asked in. With current interest focused on the impact of Fake News as a social engineering tool to affect change of major events [4], a parallel need has arisen to provide measurements that reflect both quantitative and qualitative aspects of the data content comprising a news story [5].

While many classification techniques provide a repeatable process for labeling a news story as "Fake" or "Not-fake", they do so from a perceptual lens that is located within a context that is specified relative to a set of social beliefs [6]. This renders the concept of Fake or Not-fake irrelevant from a factual basis and requires the classification be given relative to the social context the classification is being made from. While this does not negate the value of the classification, it does require additional information to convert the data contained in the news item to actionable information that can be used by the reader. In this sense, the question of whether a news story is fake or not is no longer as important as quantifying the value of the story to provide actionable information to the reader from her perspective.

The overall project introduces a conceptual framework for converting a news story to actionable information by introducing a spectrum based classification scale that gives the story a value that varies from 0.0 (totally "Not-fake") to 1.0 (totally "Fake") using a combination of two Naive Bayesian Networks, one focused on verifiable facts held within the story and the second focused on items contained within the story which are presented as fact but are one or more pieces of data combined via the editorial perspective of the source providing the story. In addition to the classification scale, the framework includes a belief function [7] that provides an independent indication of the validity of the classification scale.

This paper explores the potential to use the classification scale to enable a reader holding an individual perspective to use news stories from sources with perspectives that might, or might not be the same as the reader. Specifically, a simulation was conducted in which two readers, one whose perspective aligns with CNN and a second whose perspective aligns with Fox News, where shown news stories provided by CNN and Fox News that covered the same actual politically-oriented event in time. The classification scale value, and the accompanying belief value, were generated on a per reader basis for each story with the belief value used as a measure of usefulness in converting the data within the news story to actionable information. Data for the simulation, gathered from the GDELT Project [8], was organized into three sets of data - information regarding the actual event, CNN's news coverage of the event, and Fox News news coverage of the event.

Based on the outcome of the initial simulation, near term further study is indicated in two areas. First, would the substitution of editorial content for news content increase the sensitivity of the belief value to the classification scale value for a particular editorial when read from a particular perspective. Second, would the results hold in areas of social interest outside of politics.

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