

Controversy Detection and Stance Analysis

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ABSTRACT

Alerting users about controversial search results can encourage critical literacy, promote healthy civic discourse and counteract the “filter bubble” effect. Additionally, presenting information to the user about the different stances or sides of the debate can help her navigate the landscape of search results. Our existing work made strides in the emerging niche of controversy detection and analysis; we propose further work on automatic stance detection.

Categories and Subject Descriptors: H.3.3 [Information Storage and Retrieval]: Information Storage and Retrieval — *Information filtering, Clustering*

Keywords: controversy detection, stance detection, critical literacy

1. MOTIVATION

The challenge of navigating different sides of a debate on a controversial topic is a cognitive burden to the user, an increasingly challenging task with social and ethical implications [6]. We present existing work in the field and propose a further contribution that will facilitate healthy debates and serve users’ information needs with regards to controversial topics: automated stance extraction for controversial topics, which will detect the various sides of the debate.

Related Work. The problem of controversy detection has been receiving increased attention (see [6] for a survey). In addition to detecting the controversial topic, another challenge is understanding what is controversial about it [1, 2]; a comprehensive approach for detecting stances of a debate has not yet been proposed. Recent work has used manually extracted stances which were used as classifiers to investigate users’ opinions [7]. Further advances are needed in order to present users with explicit stances on controversial topics.

Our Contributions. We introduced the problem of detecting controversial topics on the web [3], and suggested a weakly-supervised algorithm to solve it [4]; we examined a hypothesis that controversies occur in neighborhoods of related topics, demonstrating that controversy exhibits homophily and improving the current state of the art [5].

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2. PROPOSED RESEARCH

We propose an additional contribution: automatic stance extraction. We hypothesize that the stances of controversial topics can be automatically extracted from Wikipedia; we further posit that such extracted stances can be used to classify web pages and queries, determining whether their author or issuer holds these stances.

Methodology. We intend to extract stances (sides of the debate) for controversial topics using Wikipedia: for example, using the words inserted and deleted from the article, or looking at the editors graph. Finding ground truth for this problem is challenging; however, we have found a dataset that can be used to generate evaluations.

Issues for Discussion. Given the above, we’d like to discuss the definition of controversy, and challenges in evaluation of the stance extraction problem.

3. CONCLUSION

There are multiple subtleties involved with information seeking on controversial topics [6]. We describe some work already completed as well as additional proposed work, which can inform users of the controversy level of their search terms and assist their understanding of different stances or opinions on such topics.

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