Proposal: Fake News Detection

1 Introduction

The propagation of news has transferred from through magazines or paper to through network. Although the cost and time consuming are reduced a lot in the advanced way for news propagation, such transition yields a common social issue simultaneously as well, which is the spread of fake news by groups or parties for various purposes such as commercial profits and political gains. For example, commenters suggest that Donald Trump won 2016 election under the influence of fake news [1]. Therefore, to maintain the authenticity and impartiality of news, machine learning has been widely employed for fake news detection or future fake news exploration. In this project, a comprehensive observation is conducted to the usage of machine learning methods, in terms of feature extraction and classification methods, in fake news detection.

2 Objectives

2.1 To introduce methods of textual feature extraction. Compare the pros and cons of these methods.

2.2 To explore existing methods for fake new detection (Decision Tree, Support Vector Machine, Naive Bayes, K-Nearest Neighbor, Logistic Regression, etc.) [2]. Illustrate how algorithms work and analyze their results.

2.3 To summarize the pros and cons of methods and discover future research fields.

FDS1s

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| Name | Student ID | Research Field | Final Presentation |
| Zi Li | 1780178 | Feature extraction | Feature extraction  Future Work |
| Jianqiu Bai |  | Decision Tree | Classification method  Conclusion |
| Yao Wang | 1780027 | SVM | Classification method  Conclusion |
| Huanbin Chen | 1780202 | Naive Bayes | Classification method  Introduction |
| Weihan Song | 1779478 | KNN | Classification method  Future work |
| Haoru Xiao | 1778548 | Logistic Regression | Classification method  Introduction |

4 Milestone

4.1 Oct.13: Finish proposal.

4.2 Nov3: Search and read qualified articles for fake news detection.

4.3 Nov20: Finish draft for report

4.3 Dec.1: Write the report and prepare for the presentation.

5 Reference

[1] H. Allcott and M. Gentzkow, “Social Media and Fake News in the 2016 Election,” *J. Econ. Perspect.*, vol. 31, no. 2, pp. 211–236, May 2017.

[2] K. Shu, A. Sliva, S. Wang, J. Tang, and H. Liu, “Fake News Detection on Social Media: A Data Mining Perspective,” vol. 19, no. 1, p. 15.