Fake news Detection

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Introduction

- The continuous growth of social media has provided users with more convenient ways to access news than ever before.

- As people continue to benefit from the convenience and easy accessibility of social media, they also expose themselves to certain noisy and inaccurate information spread on social media, especially fake news, which consists of articles intentionally written to convey false information for a variety of purposes such as financial or political manipulation.

- Due to extensive spread of fake news on social and news media it became an emerging research topic now a days that gained attention.

Objective

- In this work, an automatic identification of fake news in online news is proposed.

- In this poster a model is proposed based on some readability matrices such as the TF–IDF, Count-Vectorizer and Hashing-Vectorizer in order to differentiate fake news from real news.

Methodology

- The diagrammatic representation of the proposed methodology is given in Figure 1. It describes the steps that were involved in this research.

- Initially starts with collecting the data from multiple sources, then removing unnecessary characters and words from the data.

- The collected dataset is split into training and testing sets. For instance around 80% of the dataset is used for training and 20% for testing.

- Term Frequency–Inverse Document Frequency (TF–IDF), Count–Vectorizer (CV) and Hashing–Vectorizer (HV) features are extracted from all the terms/words involved in all the documents in the training corpus.

- During the classification process Naive Bayes and Passive Aggressive Classifiers are used to classify the fake news from real news.
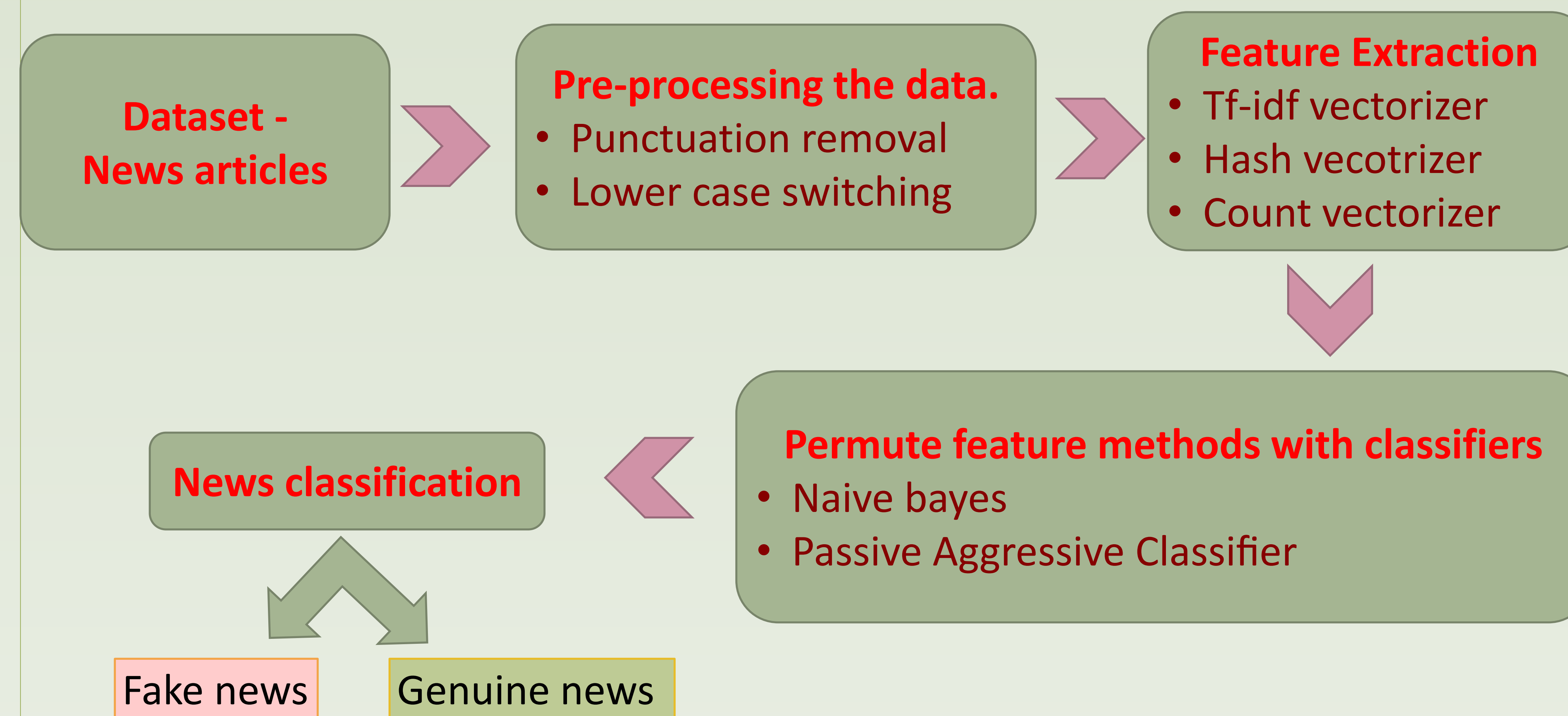

Figure 1: diagrammatic representation of the proposed methodology

Conclusion

- According to this experimental results, tf-idf feature with passive aggressive classification gives a better performance compared to other methods. Also, passive aggressive classifier gives better performance than Naïve Bayes.

Experimental results

- In this experiment, a database is collected from kaggle. It is a collection of data which mainly comprises of single statistical data matrix, database table where every row corresponds to each member in datasets and each column represents variable.

- The dataset list values for each variable such as title, id, author and label with 6335 data.

- Table I shows the performance of the different features that are used in this experiment.

Features	Naive Bayes (%)	Passive Aggressive Classifier (%)
TF–IDF	86.3	**94.1**
Count-Vectorizer	90.2	89.9
Hashing-Vectorizer	90.8	92.5

Table 1: Classification performance of the proposed methodology

References

1. Jiawei, Zhang & Cui, Limeng & Fu, Yanjie & Gouza, Fisher, Fake News Detection with Deep Diffusive Network Model, 2008

2. Rubin, Victoria L., Yimin Chen, and Niall J. Conroy. "Deception detection for news: three types of fakes." In Proceedings of the 78th ASIST Annual Meeting: Information Science with Impact: Research in and for the Community, p. 83. American Society for Information Science, 2015.

3. Pérez-Rosas, Verónica, Bennett Kleinberg, Alexandra Lefevre, and Rada Mihalcea. "Automatic detection of fake news." , Proceedings of the 27th International Conference on Computational Linguistics, 2018.