

Posting Bot Detection on Blockchain-based Social Media Platform using Machine Learning Techniques

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1 Introduction

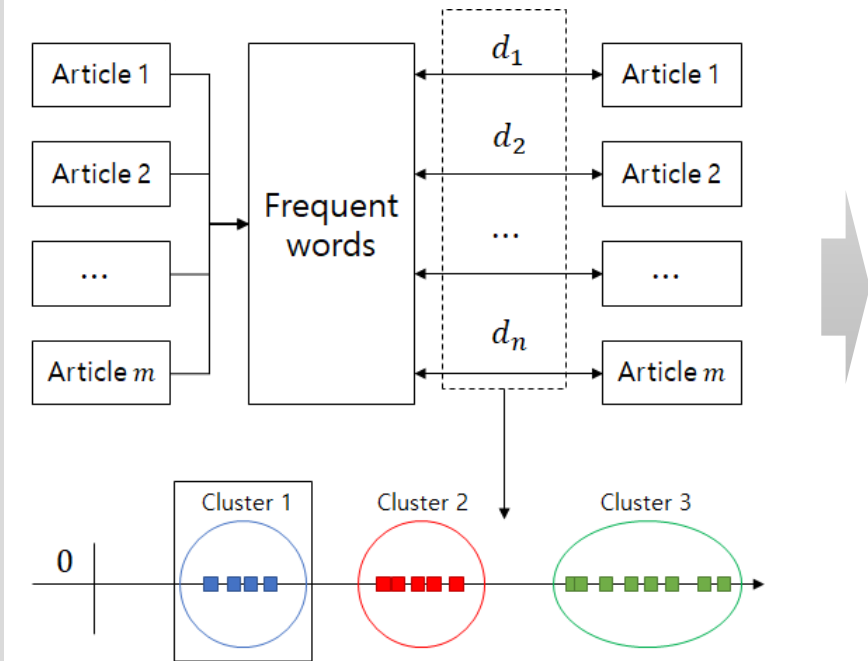
Steemit: blockchain-based social media platform

- Authors get rewards if their posts are upvoted.
- Posting bots write posts automatically to get rewards.
- Use CDFA features to detect posting bots.
- CDFA features outperformed the previous bot detecting features.

2 Feature Generation

CDFA Group

Clustering Distance between Frequent words and Articles



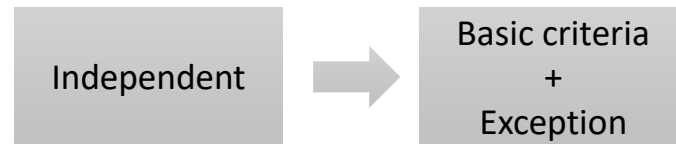
Santia-2019 Group
(Facebook)

Chu-2012 Group
(Twitter)

Blockchain-Oriented
Feature Group

3 Posting Bot Classification

Bot Annotation



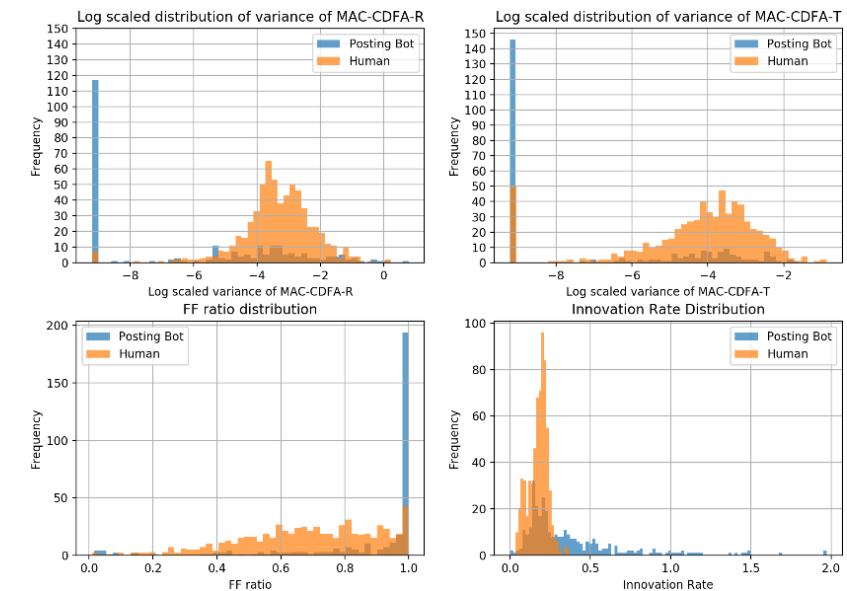
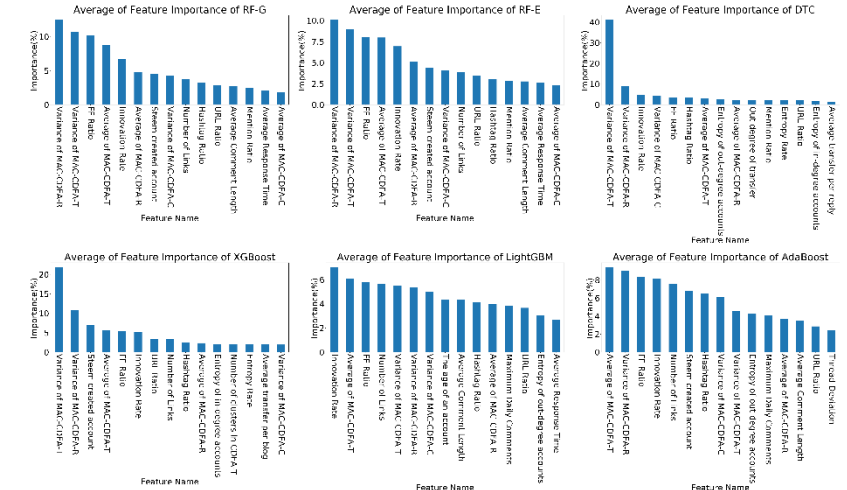
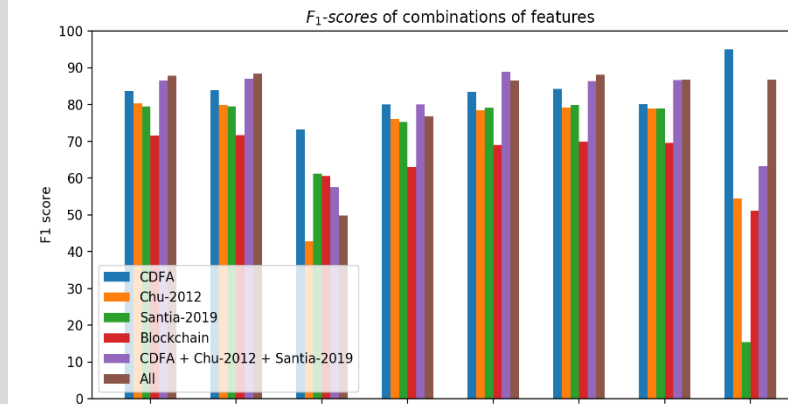
Classification Procedure

- 8 classifiers
- 5-fold cross validation
- Measure: F_1 - score

4 Results and Discussion

Results

For all classifiers, CDFA features outperformed the other feature groups.



Feature Importance and Interpretation

Top 5 Features

- Variance of MAC-CDFA-R & T/ Mean of MAC-CDFA-T: bots write almost similar titles or replies
- Innovation Rate: bots have a limited vocabulary
- FF-ratio: bots do not follow others

5 Conclusion

- CDFA features can deal with many blogs and replies.
- CDFA features are more effective than other feature groups.
- CDFA features can be applied to detect posting bots on other social media platforms.