Paper Title: Contrast Pattern-Based Classification for Bot Detection on Twitter

Paper link: https://ieeexplore.ieee.org/document/8685085

1.Summary

1.1 Motivation

Various social media platforms have bot accounts. They spread misinformation and biases within those social platforms. The motivation of this paper is to detect bot accounts on social platform twitter. It also aims to create a model classifier which is understandable and can be used to take legal action against such bot accounts.

1.2 Contribution

Prior to this paper there have been many proposed classifiers for bot detection, however none of those models are understandable. But this author's proposed mechanism not only outperforms the state-of-the-are bot detection classifier but also makes the model understandable by experts in the application domain.

1.3 Methodology

The proposed method uses four steps. First, they create a new feature model based on twitter contents. Then creates multiple distinct decision trees. After that, they select all the optimal contrast patterns. Finally they classify the query objects by using a scheme based on the weighted sum of support of all patterns covering a query object.

1.4 Conclusion

Among the 21 used classifiers, random forest and contrast pattern-based classification performs the best. Furthermore, the author's proposed model produces significantly less rules than random forest and obtains class significant results over 0.90 of AUC and 0.91 of MCC for most of the tested combinations.

2.Limitation

2.1 First Limitation

This is a supervised classification process. Thus if in future any new pattern arises, this method may not be effective. Since this classifier was trained using only twitter dataset, for other social platforms it may not work because not all social media are text based, eg: instagram, tiktok etc.

2.2 Second Limitation

The classifier is suitable for only English and Spanish language. If the bot uses some other language then it will be harder for the proposed model to detect.

3. Synthesis

The model proposed in this paper can be used to perform bot detection on social platforms. Also to take legal action against a bot account, the patterns generated by the model can be really useful. Furthermore, this model can be improved by updating the filtering method to generate even more high quality patterns. Also, it can be extended to be a more general bot detection model by testing on other social media platforms like Facebook and Instagram.