Argument Identification

Identifying Texts Containing Reasoning

by

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Introduction: Reasoning Systems

One of the most distinctive features of human intelligence is the ability to reason through the use of logical arguments.

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3) Engage with reasoning in texts by offering:

- Counter points
- Counter arguments
- Fact checking

IBM’s Solution: Project Debater

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It is thought such technology holds a number of useful applications in a variety of fields.

The Problem: Manual Tagging of Texts

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It can take countless hours of human work in reading simply to identify texts which contain arguments.

My Solution:

Create a machine learning model capable of automating the costly step of identifying arguments.

My Approach:

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2) Train the model on a subset of data.
3) Test the model on the remaining data.

Results:

When tested, the trained model successfully identified 78% of the argument texts.

Limitations:

There are some limitations to the model:

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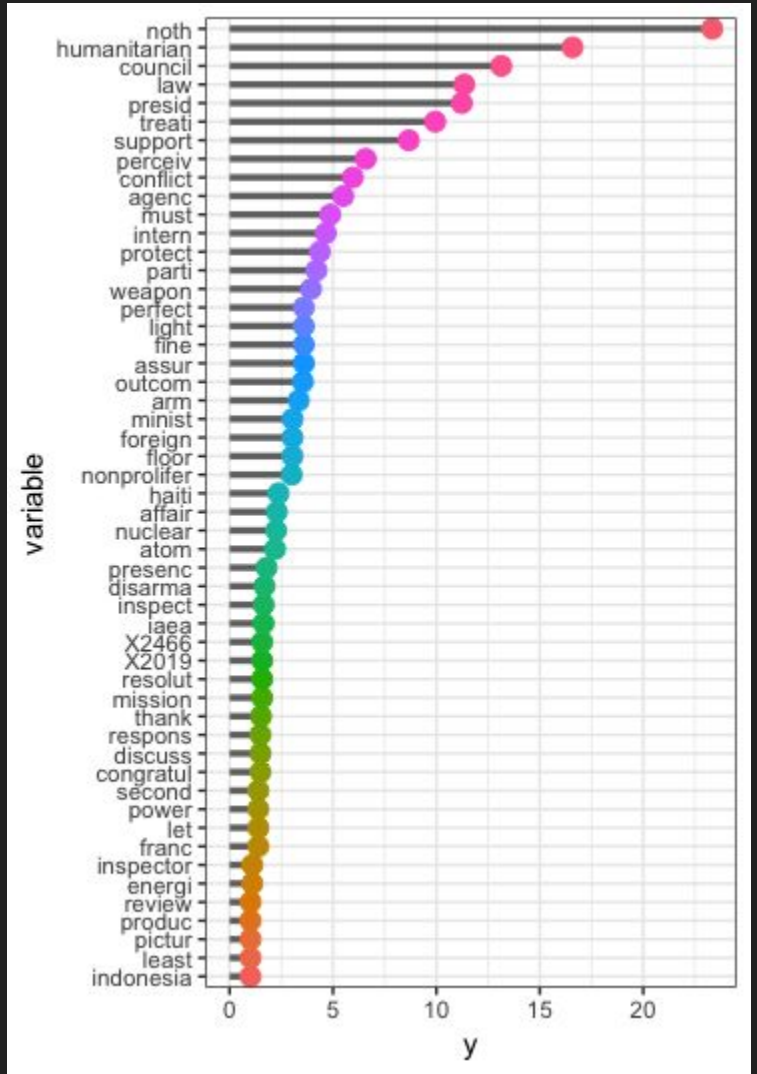
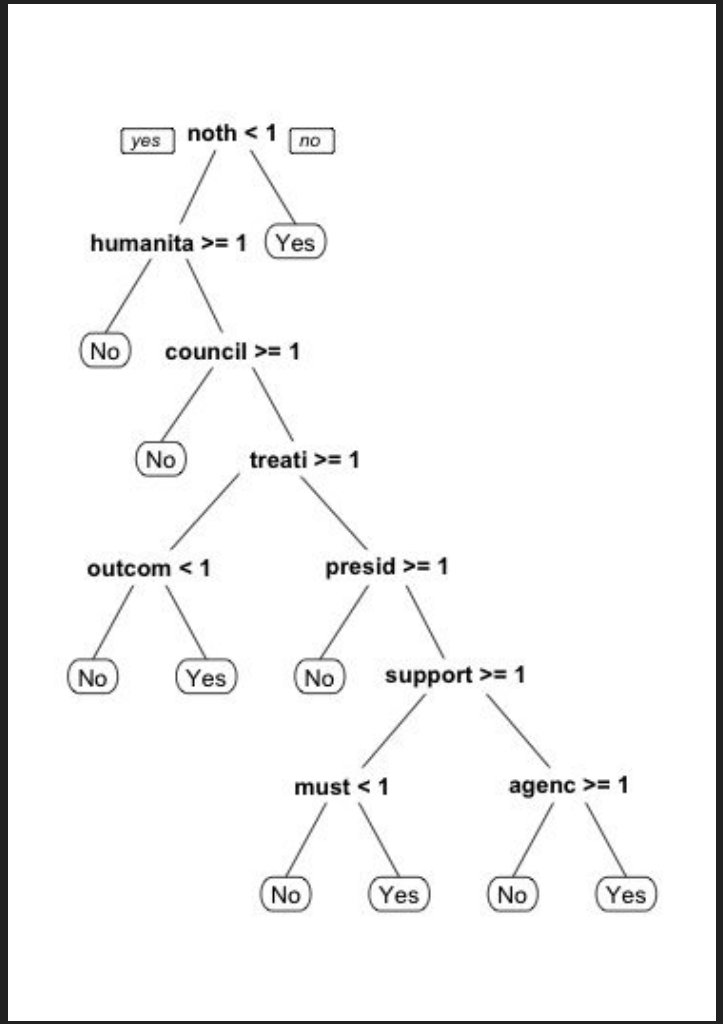
The primary limitation to the model:

- A large portion of the training data was from United Nations transcripts.

Importance of the stem words used in the trained model



Decision Tree



Recommendations:

1) Retrain a model with a more varied dataset.

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2) Try an approach which would involve creating a dictionary of common argument “indicator” words: *because, therefore, consequently...*

Conclusion:

Overall, this preliminary study shows that it is possible to train a model capable of identifying texts which contain arguments.

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Overall, this preliminary study shows that it is possible to train a model capable of identifying texts which contain arguments.

With further iteration and work, it could be a significant cost saver in terms of time to utilize such a model to aide IBM’s Project Debater team.