

Research Proposal:

Comparing RelGANs and RNNs for text generation on fiction and non-fiction text data using BERTscore

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Motivation

In the past few years, major improvements have been made in the field of image generation. For text generation there exist various techniques of which some are quite new or adopted from image generation. Hence, I am interested in which of these techniques work best and if the performance of a model is also dependent on the kind of text it is used on, for example, fiction or non-fiction like news articles.

Research question

Which text generation models work best on what kinds of data?

Methods

Data

As different text sources have an inherently different structure and vocabulary, it would be interesting to do the text generation task for multiple sources and compare the results. First of all, a fiction text source can be used, like the Harry Potter books ¹, non-fiction that is more objective like news articles ² or the widely used information source Wikipedia ³.

Models

As GANs have proven to be performing unbelievably well for image data, the same approach has been tried for text data [2]. Besides using a GAN based model, other approaches would be possible as well, like variational auto-encoders or RNNs [1].

Evaluation

As it is quite difficult to evaluate the quality of the generated text, there is a new BERT score invented for this [3]. This score could be compared over the different models and different kind of text sources used, to see if one model always performs best or that this differs per text source.

¹<https://www.kaggle.com/alex44jzy/harrypotter>

²<https://www.kaggle.com/snapcrack/all-the-news>

³<https://www.tensorflow.org/datasets/catalog/wikipedia>

References

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