Formality Style Transfer

(Using Deep Neural Networks)

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Text Style Transfer

Text style transfer (TST) is an important task in natural language generation (NLG), which aims to control certain attributes in the generated text, such as politeness, emotion, humor, and many others.

- What Is Style?
- Just as everyone has their own signatures, style is inherent to every person's utterance.
- An intuitive notion of style refers to the manner in which some semantics is expressed (McDonald and Pustejovsky, 1985).

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Text Style Transfer

- Formality style transfer (FST) is defined as the task of automatically transforming a piece of text in one particular formality style into another (Rao and Tetreault, 2018).

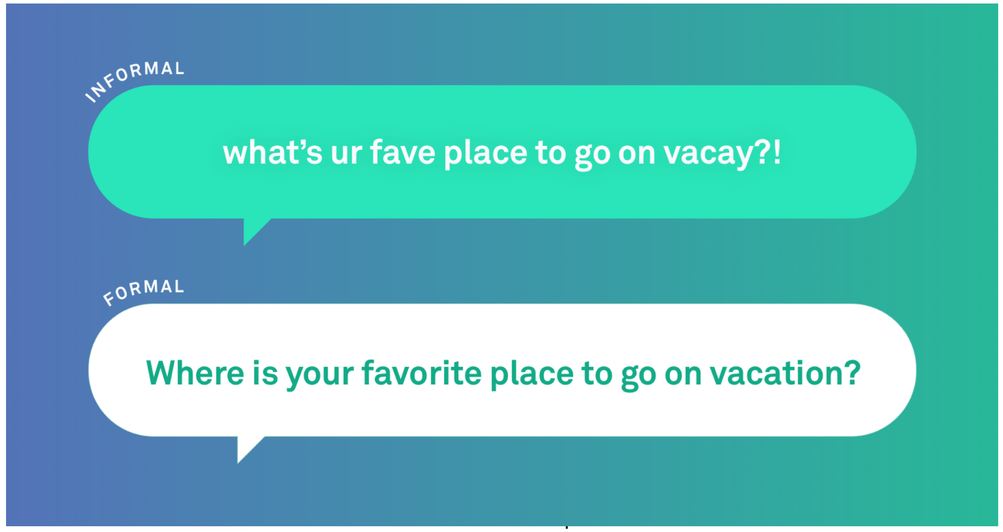
- For example, given an informal sentence, FST aims to preserve the style- independent content and output a formal sentence.

Formality Style

- Adjusting the extent of formality in text was first proposed by Hovy (1987).

- It is one of the most distinctive stylistic aspects that can be observed through many linguistic phenomena.

- The other styles includes; Politeness, Gender, Humor&Romance, Simplicity, …..



Methods

- Methods on Parallel Data
- Encoder-Decoder Architecture
- Multi-Tasking, …

- Methods on Non-Parallel Data
- VAE, GANs,…

Evaluation Metric

A successful style-transferred output not only needs to demonstrate the correct target style, but also, due to the uncontrollability of neural networks, we need to verify that it preserves the original semantics, and maintains natural language fluency.

The commonly used practice of evaluation considers the following three criteria:

(1) transferred style strength

(2) semantic preservation

(3) fluency

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Applications to Other NLP Tasks

1- Paraphrasing and Data Augmentation

2- Style-Specific Machine Translation

3- Style Transfer for Adversarial Text Generation

References

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Thanks for Your Attention

Any Question?