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Data, Models, and Code: github.com/prerna135/prose-for-a-painting

Prose for a Painting

Painting captions are often dry and simplistic which motivates us to describe a painting creatively in the style of Shakespearean prose. This is a difficult problem, since there does not exist a large supervised dataset from paintings to Shakespearean prose. Our solution is to use an intermediate English poem description of the painting and then apply language style transfer which results in Shakespearean prose describing the painting. We rate our results by human evaluation on a Likert scale, and evaluate the quality of language style transfer using BLEU score as a function of prose length. We demonstrate the applicability and limitations of our approach by generating Shakespearean prose for famous paintings.

Model architecture: Input is a painting (top left) for which we first generate an English poem using 3 CNNs for feature extraction, and an RNN generator as an agent with 2 discriminators (center right) which provide feedback to the agent for model improvement. The style transfer model takes as input the generator output and performs text style transfer using a seq2seq model with global attention to synthesis the output prose (bottom left).

Sample result: Input painting and output synthesized Shakespeare prose

Survey results: Average rating of content, creativity, and style on a Likert scale

Sample results: Painting (left), synthesized English poem (center) and Shakespearean Prose (right) for "Girl with the pearl earring", a painting of a man on a lake, and "Portrait of Madame Recamier"