

A creative model on modern Chinese poetic sentences generation enhanced by glyphs

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Abstract

In this paper, we propose a joint modern Chinese poetic language model to generate creative poetic sentences according to previous context. Our model is composed of three parts: First, a language model which is a standard encoder-decoder structure; Second and most importantly, we employ a glyphs model to emphasize the information contained in Chinese character components; Third, a rhyme model to learn the patterns of finals, the vowels of Chinese characters, in a line.

1 Introduction

In the past few years, natural language processing is becoming more and more important by modeling human languages. It has made huge improvements on text classification(Zhang et al., 2015), machine translation(Bahdanau et al., 2014), Q&A task(Devlin et al., 2018) and named entity recognition(Lample et al., 2016) etc.. In these studies, most works are based on English corpus which consists of broadly available large language texts. But for other languages, like Chinese, the models may not make full use of the information provided by the words or characters leading to the omission of some linguistic features.

Modern Chinese poetry is a vernacular style poetry which is more free as opposed to traditional Chinese poems that strictly follow the formats, rhyming and complicated tonal rules(Yan et al., 2013). Without the restrictive doctrines, one of the creative representations in modern Chinese poems is the interesting composition of verbals and nouns. Like in a stich composed by Gu Cheng, a famous Chinese modern poet, 我和无数/不能孵化的卵石/垒在一起 (*I'm accompanied with so many **cobblestones** that can not be **hatched***)

where the appearance of both 孵化(hatch) and 卵石(cobblestone) leads to an interesting imagination, since in Chinese, 卵石 means *a stone like an egg* and *hatch a egg* is a rational cue inspired by the sentence. And this relationship, with the glyph of Chinese characters, is easy to get.

So we're proposing a glyph-emphasized modern Chinese poetry composed of following parts:

- Language model with a standard encoder-decoder structure. The encoder is based on pre-trained BertModel(Devlin et al., 2018) with input of word embedding and position embedding;
- Glyph model designed to capture information of Chinese character components.
- Rhyme model to learn the patterns of finals in a stich. In the generation procedure, it will calculate the cosine similarity of each sample given by the language model and select the ones that are the most similar with existing rhyme patterns.

Our data is collected from two resources: 1.Gallery of Modern Chinese Poetry(sgd) which consists of 5174 poems from 519 poets and a more recent collection, which is still updating, 2.Daily Poems of Chinese Poetry(zgs) which consists of 4388 poems from 1137 poets.

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