Information Summarization and Topics generation

DS 595 Natural Language Processing

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Outline

1. References
2. Introduction
3. Methodology

References

Reference i

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- Raffel, C., Shazeer, N., Roberts, A., Lee, K., Narang, S., Matena, M., Zhou, Y., Li, W., and Liu, P. J. (2020).
  Exploring the limits of transfer learning with a unified text-to-text transformer.

Reference ii

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Introduction

Problem Statement

Given the document D, we want to generate string h_D such that it summarizes the content in D with accurate information and concise.

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Example

D: At the request of the international war crimes court in The Hague, Bosnian Serb police seized the passports of the wife, son, daughter and son-in-law of Radovan Karadzic, the Bosnian Serb leader during the country's war.

h_D: Bosnia: Police Take Passports of Karadzic Family

Methodology

Literature Review

- As suggested by [Sutskever et al., 2014], RNN model can yield us the promising result but it also yield "artifacts" to the result.

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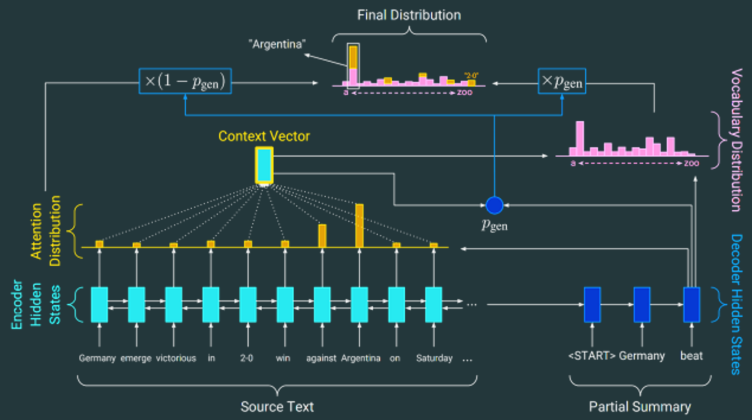
- Bidirectional RNN [Nallapati et al., 2016] shows the better performance.

Architecture



Use bidirectional LSTM along with attention to encode and generate context vector [See et al., 2017].

Architecture

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- What if we combined the method proposed by [See et al., 2017] or [Raffel et al., 2020] with generative model?
- That is, what if we treat [See et al., 2017] or [Raffel et al., 2020] model as the generator and we then create discriminator on top of that?

Dataset

- NYT news dataset

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- >100K entries of title, topic, abstract, keywords
- Problem: Some punctuation might contains semantic value

Evaluation

- Metric of evaluation: BLEU and ROUGE-l