Abstract

- Problems in the seq2seq (repetition and semantic irrelevance);
- Our global encoding mechanism: CNN and self attention;
- Improved performances on the benchmark datasets;
- Generate summaries with less repetition and higher semantic consistency to the source text.

Sequence-to-Sequence as Baseline

- Encoder: RNN is more popular, usually LSTM and GRU
- Decoder: RNN for sequential decoding. Usually training is with teacher forcing.
- Attention mechanism: additive attention or global attention for the relevant source-side information

Example

- Problems in the seq2seq (repetition and semantic irrelevance);

Text: the mainstream fatah movement on monday officially chose Mahmoud abbas, chairman of the Palestine liberation organization (plo), as its candidate to run for the presidential election due on jan. h, wafa, the official wafa news agency reported.

seq2seq: fatah officially officially elects abbas as candidate for candidate.

Gold: fatah officially elects abbas as candidate for presidential election.

Problems

- Noise in the source context.
- Relationship between the source and the target is different from the alignment in machine translation, and correct alignment does not always indicate good summary.
- Source annotation at each time step lacks global information of the context, which may provide unnecessary information for summary.

Global Encoding

- Convolutional Neural Networks over the source annotations.
- Self attention for the connections to the global context.
- Collaboratively build a gate for the original source annotations.

Experiments

- Datasets:
  - LCSTS and Gigaword

Qualitative Analyses

- Conventional Seq2Seq requires a mechanism to improve the source annotations so that they can provide summary-oriented information for the attention.
- Global encoding can improve the quality of generated summaries, which is reflected in both the ROUGE evaluation and the case study.
- It still requires future work to figure out what it filters and how it improves the performance of the model.