

Seminar: Generating Narrative Paragraph for Photo Stream via Bidirectional Attention Recurrent Neural Networks

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Abstract

When machine learning techniques develop rapidly in image captioning, other extension relevant areas appeal to many researchers doing further study. Among them generating story from sequential photo stream becomes quite interesting and challenging task. Compared with single image captioning, this task needs to handle with two mainly problems facing to researchers, large visual variance in sequence and longterm language coherence among multiple sentences. Till now those two critical questions are solved by different approaches. In this paper, we mainly focus on one of them, generating story from sequential photos stream via Bidirectional Attention Recurrent Neural Network method, and discuss several relevant approaches from first paper to state-of-the-art.

1 Introduction

2 Related Work

Due to interaction between computer vision and natural language processing is new topic, particularly in image description, there are several researches divided in three categories: single-frame to single-sentence, multi-frame to single-sentence and multi-frame to multi-sentence.

2.1 Single-frame to single-sentence

These researches focus on image captioning task, which can be classified into two sub-categories: semantic element based methods

2.2 Multi-frame to single-sentence

This family of approaches, mainly focus on video captioning to captures the temporal dynamics in

variable-length of video frames sequence and to map them to a variable-length of words.

2.3 Multi-frame to multi-sentence

The work by is the first scheme to explore the task of image streams to sentence sequence.

3 Approach

3.1 Joint Embedding for Semantic Space

3.2 Bidirectional Attention RNN for Textual Story Generation

4 Experiment

5 Evaluation

6 Discussion

aaaaa (Chandra et al., 1981)

References

Ashok K. Chandra, Dexter C. Kozen, and Larry J. Stockmeyer. 1981. Alternation. *Journal of the Association for Computing Machinery*, 28(1):114–133.