

Bi-month Report

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- Relation classification via RNN
- Inferring topic model using DNN

Relation Classification via RNN

- **Task definition:**
Classify relation type from each input sentence.
- **Related work:**
Recursive DNN and Convolutional DNN
- **Method:**
Bidirectional Recurrent DNN combining with pooling layer.
- **Conclusion:**
RNN can indeed learn more sequential information thus results in performance improvement.
- **Drawback:**
The training process is a little slow.

Inferring Topic Model using DNN

- **Purpose:**
 - Produce topic distribution for each input article.
- **Background:**
 - Probabilistic graphical model
 - Dark knowledge
- **Method:**
 - Use the output of LDA to teach DNN.
- **Conclusion:**
 - DNN can approximately simulate the topic distribution produced by LDA, with faster inferring process.
 - This is also a good trial of studying the capacity of DNN to simulate probabilistic graphical model.
- **Drawback:**
 - The capability of approximation declines when the size of training set is too small.

Future Work

- Bayes and neural network
- Dark knowledge on NLP