Product Aspect and Sentiment Analysis without Parsers

CS671 PROJECT PRESENTATION

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Motivation

- Why review summarization.
- Problems with existing solutions.

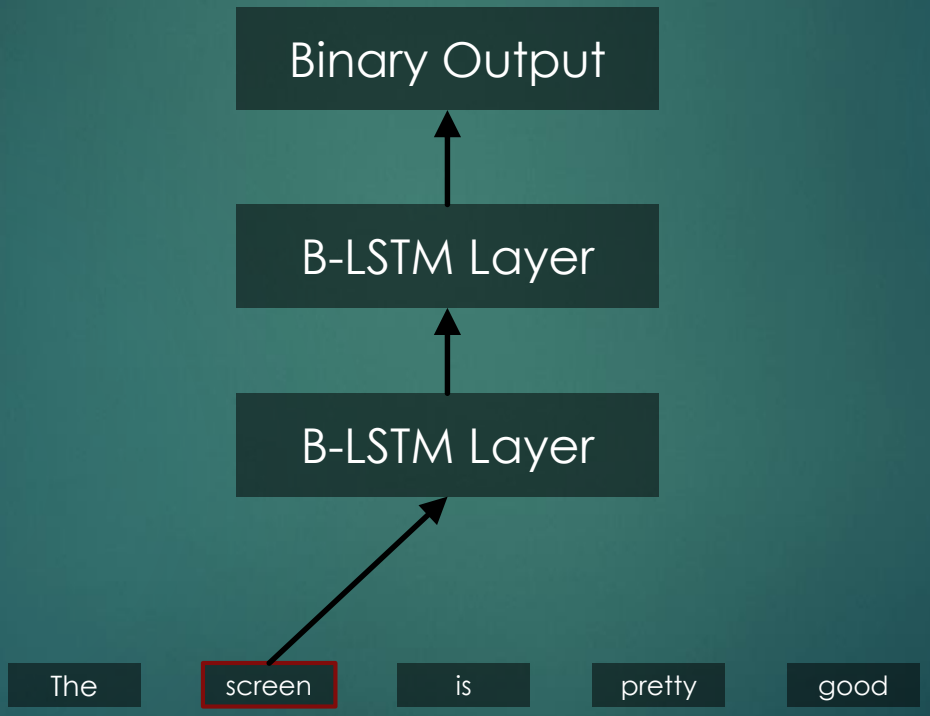
Goal

- Aspect extraction without using a parser.
- Sentiment analysis based on aspects.
- Summarization of information obtained in a concise manner.

Proposed Approach

- Aspect extraction
  - We follow Zhou and Xu's implementation of SRL without parser, using a Deep Bidirectional LSTM.
  - Binary classification as aspects and non-aspects.

Basic structure



Proposed approach

- Sentiment analysis based on aspects
  - Use standard classifiers such as Naïve Bayes and Maximum Entropy model.
  - Alternative approach – Use model presented in Pranjal's thesis.

Proposed approach

- Summarization
  - Summarize sentiments for aspects.
  - Overall sentiment for the product.

Resources

- Amazon product review dataset dataset by Prof. Bing Liu.
- Wikipedia English corpus for training Word2Vec.
- Pre-trained Google News Word2Vec model.

Future work

- Identify properties of aspects which are good or bad.
- Use different languages

References

- Zhou, Jie and Xu, Wei. "End-to-end Learning of Semantic Role Labeling Using Recurrent Neural Networks" (2015)
- Poria, Cambria, Wei Ku et al. "A Rule-Based Approach to Aspect Extraction from Product Reviews" (2014)
- Pavlopoulos & Androutsopoulos. "Aspect Term Extraction for Sentiment Analysis: New Datasets, New Evaluation Measures and an Improved Unsupervised Method" (2014)
- Minqing Hu and Bing Liu. "Mining and summarizing customer reviews" (2004)

Thank you

QUESTIONS?