Discourse-Sentiment Alignment Tool (DSAT)

Second Peer-Review

Patrick Huber
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Discourse Parsing:

- Crucial task within the area of NLP
- Enhances many downstream applications
  - Sentiment analysis
  - Summarization
  - Question answering

Goal:

- Reveal the underlying structure of coherent text (a discourse)
  - Complete documents
  - Multiple sentences
Discourse Parsing

Intro

Normally:

- Human-annotated gold-standard discourse trees

In my research:

- Use large datasets without gold-standard trees
- Automatically infer discourse trees
- Using distant supervision from sentiment data
But he added:

1. "Some people use the purchasers' index as a leading indicator,

2. some use it as a coincident indicator.

3. Contrast

4. But the thing it's supposed to measure

5. -- manufacturing strength --

6. it missed altogether last month."

Attribution

Contrast

Same-Unit

Elaboration
Problem / Objective

Problem:
- Fully automated generation
- No human-in-the-loop
- Existing tools limited to comparisons against gold-standard

Objective:
- Create InfoVis system, which generates insights into the alignment of discourse trees and sentiment
Data

Yelp ‘13 review corpus

- ~336,000 reviews
- 1-5 star rating per review

Star Rating

+ 

Customer Review

#1223
What happened to Dunkin’ Donuts? (1)
Holy crap does this place suck. (2)
The donuts are stale and taste weirdly like chemicals. (3)
I can not recommend anything (4)
except that you drive five minutes to Bosa Donuts on McDowell. (5)
Great donuts (6)
and locally owned. (7)
Support local. (8)
The Visualization - Stage 1

Discourse-Sentiment Alignment Tool (DSAT)

Documents
- Document 54
- Document 55
- Document 56
- Document 57
- Document 58
- Document 59
- Document 60
- Document 61
- Document 62
- Document 63
- Document 64
- Document 65
- Document 66
- Document 67
- Document 68

Tree Structure (Doc 62)

Documents
- Document 54
- Document 55
- Document 56
- Document 57
- Document 58
- Document 59
- Document 60
- Document 61
- Document 62
- Document 63
- Document 64
- Document 65
- Document 66
- Document 67
- Document 68

Discourse (Doc 62)
1. [jason works chairs]
2. [that are always]
3. [being taken up by the old]
4. [guy with their newspapers]
5. [i get off , no offense .]
6. [know they go their first and fair is fair ) and a bunch of hardwood chairs . what]
7. [can you blame me ?]
8. [no .]
9. [no is the answer to blaming me .]
10. [anyway , their drinks are all right ,]
11. [the baristas are friendly]
12. [( some a strange ,)
13. [but overall a friendly bunch ] i]
14. [used to work at starbucks eons ago so]
15. [i 'm really picky]
16. [and i like this one .]
Peer Review Round 1

Good:

- Clear visualization
- Uncluttered display
- Intuitive
- No occlusion
- Bidirectional highlighting

To enhance:

- Round edges
- Collapse sub-trees
- Add option to go one level up
- Sometimes hard to click on nodes
- Pan & Zoom
- Zoom by clicking text
The Visualization - Stage 2

Documents
- Document 62
- Document 63
- Document 64
- Document 65
- Document 66
- Document 67
- Document 68
- Document 69
- Document 70
- Document 71
- Document 72
- Document 73

Tree Structure (Doc 62)
- Sentiment: negative, positive
- Attention: low, high

Sentiment Scale: relative, absolute

Discourse (Doc 62)
1. [love this starbucks]
2. [because of the booths .]
3. [i do homework here .]
4. [and dislike it]
5. [when all i have to choose from are two]
6. [cushioned chairs ()]
7. [that are always]
8. [being taken up by the old]
9. [guys with their newspapers]
10. [-- no offense , i]
11. [know they go their first and fair is fair ) and a bunch of hardwood chairs , what]
12. [can you blame me ?]
13. [no .]
14. [no is the answer to blaming me .]
15. [anyway , their drinks are all right ,]