Natural Language Processing: Assignment III

Reykjavik University - Department of Computer Science

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1 Natural Discourse - 40%

1.1 Transcription Task (20%)

Collect a sample of naturally occurring spontaneous face-to-face discourse. "Naturally-occurring" can be broadly construed to include talk shows, conversation among friends, storytelling, classroom interactions and tutoring sessions. "Spontaneous" means it should *not* be a recital of written text like a movie, TV series or a news cast. "face-to-face" means you need to have visual access to the bodies of the speakers and hearers. "collect" means here that you can either do your own video (and audio) recording (e.g. on your cell phone), or you can find an existing recording. Remember that if you do your own recording, you need the consent of everyone involved (no spying!). You should collect a minimum of 3 minutes.

Then transcribe at least 2 continuous minutes. "Transcribe" means you should make a record on paper/computer of what you saw/heard - a good enough record so that when the transcript is read the reader knows what went on.

1.2 Discussion (10%)

The point here is to push you to think about what naturally occurring discourse looks like, how to capture it and what is needed to understand it. In about half to one page, write about what you observed while making the transcript, discussing at least the following questions:

1. What makes a sufficient record of the face-to-face discourse for understanding what took place?

2. Do you think you included everything that mattered for understanding? If not, why not?

3. Were there spoken parts that seemed incomplete, unnecessary, wrong or incomprehensible? If so, did you feel you had to "clean" any of those up, or correct them, in the transcript? Why / why not?

4. Were there non-spoken parts that were important, but were hard to describe? If so, could they be sufficiently recorded in a transcript?

1.3   Reflection on Computation (10%)

Think about how a *computer* could participate in *this particular discourse that you collected*. Supposing that it had perfect speech and word recognition, what would then become the most challenging issues for the computer when trying to follow this discourse (e.g. as a participant)? Write one paragraph to explain your thoughts on this, *giving specific examples from your data* to support your arguments.

2   Discourse Structure - 30%

2.1   Segmentation Task (10%)

First, without thinking too hard, go through your transcript from part 1 and draw horizontal lines through it where you feel there are *natural boundaries between discourse segments*. Label all the segments, such as by giving them letters e.g. "A", "B" etc.

2.2   Segment Analysis Task (10%)

Now, go back and for each segment you labeled, answer the following questions (you can put your answers into a table where you list the segments):

1. What do you think was the strongest evidence to you that this is a separate segment of discourse? Does it have a specific purpose within the overall discourse, surround a particular meaning or a specific event? Does it stand in a rhetorical relation to another segment?

2. Is the *start* of this segment explicitly signaled with a discourse connective? Which connective?

3. Is the *end* of this segment explicitly signaled with a discourse connective? Which connective?

4. Does this segment follow in a linear fashion from the previous segment, or is it embedded within another segment (hierarchical structure)?

2.3 Discussion (10%)

After having gone through the two previous tasks, reflect a bit on this process and answer these questions:

1. Do you think that *another person* segmenting the same discourse would have placed the boundaries in the same locations as you did? Why / why not? If not, what parts are likely to have been segmented differently? Why?

2. Do you think that a rule based *computer algorithm* could be created that could perform the same segmentation that you did? Why / why not?

3. (Optional) How well does a *generative AI chatbot* perform on this task? Try asking it to do it for you and then compare the results to yours. Are the results similar? If not, briefly explain why they might be different.

3 Discourse Function vs. Device - 30%

3.1 Classification Task (20%)

Decide and indicate whether the following phenomena are examples of a *Discourse Function* or a *Discourse Device*.

1. Requesting payment

2. Acting surprised

3. Requesting the speaking turn

4. Saying "I do not have any money!"

5. Crossing the arms

6. Showing sympathy

7. Smiling and shaking the head

8. Uttering "Don't worry"

9. Showing the signs of relief

10. Making the sound "Ah" (Or "/æ/ /h/" using the phonetic alphabet)

3.2   Spotting Examples (10%)

Go back to your transcript from section 1.1 and provide examples from it of
5 discourse devices, along with the *functions they carry out*.

4   Due Date and What to Return

Return this assignment by Thursday the 30th of October at 23:59. You do
not have to return your video material, just your transcript and answers to
these questions.