Group Report: 1(Group4)

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I)   Segmenting and labelling topics (5p):

1. In your experience segmenting the text into topics, how clear were topic boundaries? What information did you use to help you identify boundaries? What was hard about identifying boundaries?

Ans) In my experience breaking the text into topics, I discovered that while topic boundaries were typically distinct, there were a few instances where it was challenging to pinpoint the precise spot where one topic stopped and another began. I kept an eye out for changes in the topic or conversational emphasis, alterations in the speaker's voice or tone, and clues from the text, such as signal words or phrases, to help me spot limits. It was challenging to establish limits because there were times when the discussion slid easily from one subject to another.

2. How much overlap in topic segmentation did you find there was across annotators?

Ans) Although there was some overlap in subject segmentation among annotators, we had a high degree of agreement on the bulk of themes.

3. To what extent do you think topics can be found in adjacent segments? Do you think this could vary across different text types?

Ans) I believe that topics can be discovered in adjacent segments to some degree, particularly if they are closely connected. However, this may change across various text types based on variables such as the length of the text, the complexity of the topic matter, and the conversational manner.

4. What criteria did you use to come up with labels for topics?

Ans) I came up with topic titles by combining the subject matter discussed, the tone or mood communicated, and the verbal emphasis. I attempted to come up with labels that correctly reflected the topic's primary concept or theme.

5. Did you all come up with similar labels? For which topics did you find the most/least agreement?

Ans) We all came up with classifications that were pretty similar, but there were some subjects where we disagreed more than others. The subjects that had the most consensus were those that were very clearly defined and had a limited emphasis, while those that had the least agreement were those that were more broad or abstract.

II)   Annotation and Machine Learning models (4p)

1. If we were to set up a human-in-the-loop model, where the model queries an annotator about specific annotation instances, how could a statistical model help annotators make decisions?

Ans) A statistical model could assist annotators in making choices by predicting which instances are more likely to be difficult or unclear to annotate and then highlighting those instances for the annotator to examine. This would save the annotator time and effort by requiring them to concentrate only on the most essential and difficult cases. Based on its predictions, the model can provide suggested annotations to the annotator. The annotator can then go through these annotations and confirm or amend them as needed. The model can anticipate annotations for vast volumes of data, decreasing the time and effort required for the annotator to manually annotate all instances and so accelerating the annotation process.

Topic segmentation & labelling 2

2. What do you think are the biggest challenges for annotating language datasets for ML models?

Ans) The most difficult challenges for marking language datasets for ML models are assuring consistency and precision in labelling, coping with uncertainty and subjective perception, and keeping up with quickly changing language and cultural standards. Language is also subjective, and various people may understand and disagree with the same material. To maintain consistency and dependability in their annotations, annotators must be trained. Annotators can introduce prejudices and worldviews into the annotation process, resulting in biased datasets and erroneous ML models. Annotator bias must be identified and mitigated through training and quality control procedures.

3. What kind of model do you think would benefit from the data you annotated?

Ans) The data we labelled could help a variety of models that require subject segmentation and labelling expertise, such as sentiment analysis, natural language comprehension, and information retrieval.

4. How would you (partially) automate these tasks?

Ans) A combination of rule-based and machine learning-based methods would be one way to partly automate these chores. Rules, for example, could be used to identify specific terms or phrases suggestive of a new topic, whereas machine learning models could be taught on annotated data to forecast topic shifts based on a variety of characteristics such as syntactic structure, semantic similarity, and speaker identification. Active learning methods could also be used to carefully query annotators for difficult or uncertain cases and integrate their input into the model training process.

III) Annotation interface (2p)

1. **Discuss the advantages and disadvantages of the way the tasks were set up. You may consider:**
a. An alternate setup for segmentation in which longer sections of the conversation would be shown per screen. Would this be beneficial? How would you decide how many turns to show? What would be possible effects on annotators?
Ans) One alternative segmentation setup would be to display extended portions of the discussion per screen. This could be advantageous because it would provide annotators with a greater grasp of the general context and flow of the conversation, allowing them to make more accurate segmentation choices. Choosing how many turns to display per screen, on the other hand, could be difficult, as showing too many turns could overwhelm annotators and make the job more difficult while showing too few turns could result in a loss of context. Furthermore, because lengthier portions demand more sustained concentration and focus, this arrangement may result in annotator fatigue.
b. An alternate setup for segmentation in which the task is other than a binary decision task (same vs new/different topic). What could that task be?
Ans) Another alternative segmentation arrangement could include a job other than a binary choice task. Instead of asking annotators whether a section of conversation reflects a new or distinct subject, they could be asked to determine the primary topic or theme of each section. This could provide more nuanced information about the conversation's substance and make it more fascinating and engaging for annotators.
2. How would you improve the annotation interface?

Ans) Several adjustments could be implemented to enhance the annotation interface.

For example, it could be beneficial to provide annotators with more background about the discussion they are annotating, such as information about the individuals, the subject, and the goal of the conversation. Furthermore, the interface could be made to be more intuitive and user-friendly, with explicit directions and assistance throughout the annotation process. Lastly, adding features such as keyboard shortcuts and automated saving could help to simplify the annotation process and make it more effective for annotators.

Contribution Statement:

1. Segmenting and labelling topics : DESIREDDY SAI SANKEERTHANA,CHARAN SAI SADLA
2. Annotation and Machine Learning models : HARSHA SRI TIPIRINENI,BALAJI THERATIPALLY
3. Annotation interface: SHREYA KATEPALLY, VAMSHI JAMALPUR.