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Project Proposal: Human Language Technologies

There are two main parts to the project we are proposing. Part 1 will be to develop a model to determine the usefulness of each sentence within a Yelp review. Part 2 will be to use this model to extract the most useful information from the set of reviews for a particular business; this information will be used to generate a concise “meta-review” that summarizes the original set of reviews.

Evaluation:

We will use data from the Yelp Challenge data set for training and testing purposes in Part 1. We can evaluate how accurate our usefulness rating for a review is by comparing it to how other Yelp users rated the review. The evaluation for Part 2 will necessarily be more subjective. We will generate examples of meta-reviews, and ask volunteers to determine how successfully each example compiles the most useful data from the existing reviews of the business.

Tentative Timeline:

3/1 Submit Project Proposal for review.

3/4 Review the related work, consider possible techniques for implementing review usefulness quantification, and determine what implementation tools are necessary over the break on an individual basis.

3/15 Based on our individual research, create a skeleton idea for a program to calculate the usefulness of a sentence within a review. Divide up responsibilities and begin the implementation.

3/25 Have a functioning program that is able to quantify the usefulness of a sentence within a review. Using this program, begin to develop another program that will extract the most useful details from reviews for a single business.

4/14 Have a working program to extract useful details from reviews for a single business. Modify the program so that it compiles the details into one meta-review. Then begin fine-tuning the code and evaluating the results.

4/21 Have all programming and evaluation of results finished. Spend the next week working on the presentation.

4/28 Presentation.

Related work:

* “Exploring the mechanisms behind the assessment of usefulness of restaurant reviews” (<http://dl.acm.org/citation.cfm?id=2768557>). This team used interviews to figure out what makes a review feel useful to a person using Yelp.
* “Low-Quality Product Review Detection in Opinion Summarization” (<https://aclweb.org/anthology/D/D07/D07-1035.pdf>). This team defined what a high-quality review of a product was. Then, using this definition, were able to filter out poor quality reviews to enhance opinion summarization.
* “The Social Aspect of Voting for Useful Reviews” (<http://link.springer.com/chapter/10.1007/978-3-319-05579-4_36>). This team determined what criteria people use to rate a review. They devised a regression model that predicts the usefulness rating of reviews.
* “Finding Thoughtful Comments from Social Media” (<http://www.aclweb.org/anthology/C12-1061>). This team measured how thoughtful a comment was in social media. They could determine the quality of the comment and the opinion of the person writing it.