Measuring Average Treatment Effect

In Reddit’s “Change My View” forum

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**INTRO**

**C**hange **M**y **V**iew

Reddit community formed an arena for inviting others to explain why they disagree with you in the pursuit for greater understanding on the matter. By submitting a well explained opinion that is opened to change, filled according to a strict set of rules (which apply on the responders as well), one is actually starting a civil discourse that has a great potential of being content rich and very much diverse. This unique DNA is becoming especially vital in an era where all other social platforms and intelligent agents are oriented to extend one’s stay by exposing only similar opinions and content.

“In order to resolve our differences, we must first understand them. We believe that productive conversation requires respect and openness, and that certitude is the enemy of understanding.”[CMV WIKI](https://www.reddit.com/r/changemyview/wiki/index)

**Data structure**

An opinion is submitted as a new topic in the subreddit, and by that a new hierarchical tree of comments is started for that topic, while everyone is free to respond to anyone, meaning directly to the topic submission or to any comment inside the tree.

CMV evolved throughout the years of its existence, adding new mechanisms that contribute to the discussions and provide important social insights on civil discourse, persuasiveness and opinions. An evolution that created a breeding ground for many researches from different domains including social science, artificial intelligence etc.

The most familiar mechanism is “Delta”, a sign taken from mathematics as a symbol for change, the delta is an incentive that anyone can grant anyone else, again if aligned with the rules, for acknowledging the influence that latter had on the former’s opinion.

**OUTLINE**

In the framework of our project, the delta is taken as the outcome, meaning the information we wish to predict and measure the effect of other characteristics in the discourse on it, in a causal manner.

**Definitions**

Data: submissions and comments from the subreddit Change my view. Initial raw data, around 35K submissions and 2.5M comments.

Outcome: A binary label for each comment in the data, whether the submitter gave a delta to the comment or not.

Treatment: A binary value indicating quotation, whether the comment quoted the submitter: either the submission itself or the comments’ parent if was written by the submitter.

Filter: only comments with more than 150 characters which were posted in the week after the submission was posted – about 0.5M comments

Causal question: what is the causal effect of a quote of the submitter on the delta, i.e whether a comment that quotes the submitter caused him to give delta to this comment.

Units: each unit will be a comment and its submission.

Features:

1. Length of the submission
2. Length of the title
3. Length of the comment
4. Sentiment of the submission (http://text-processing.com/docs/sentiment.html)
5. Sentiment of the submission’s title
6. Sentiment of the comment
7. Cosine similarity between the Sentiment of the submission and the Sentiment of the comment
8. Number of submissions that the submitter wrote
9. Number of submissions that the comment author wrote
10. Number of comments that the submitter wrote
11. Number of comments that the comment author wrote
12. Time between the submission and the comment
13. Similarity between the submission and the comment – the idf from all the data – maybe 2 features
14. % of the Adjective in the comment- kind of רגש in these POS
15. Topic modeling – give any word its topic – give the sentence the topic with the highest dist. Of its words.
16. If this is the first comment of this user to this submission
17. Number of comments of this user in this submission until the unit
18. Time between the submission and the first comment - Time between the submission and the comment (this unit)
19. Number of times the submitter responded to the comment user in this submission
20. Number of times the submitter responded in total
21. Number of times the submitter responded to the comment user in this submission/number of comments to the submission
22. Number of times the submitter responded to the comment user in this submission/ Number of times the submitter responded in total
23. Number of times the submitter responded in total/ number of comments to the submission
24. The seniority of the commenter in change my view (how many days passed since his first comment in the data)
25. The seniority of the submitter in change my view (how many days passed since his first comment in the data)
26. דני יוגטמה עשה עבודה על טקסט קלאסיפיקיישן- להסתכל מה הפיצ'רים שהשתמש בהם
27. noah smith -NLP for social science

* Model

Outcome

Features

Current treatment

Purpose – good enough model, enable measuring ate of one of it’s features – the treatment

* Causal question

**Code modules –**

purpose

Logic highlight

**Results**

**Difficulties**

Scraping

Runtime

data

**Future work**