

# Comment Prediction

Anonymous ACL submission

## Abstract

An online comment can range from serious to humorous and from acclaiming to deriding. All comments are subjective to the content they reply to and the general context. In this article we will describe the programme that predicts public reaction to an online comment, a Reddit comment in particular. Also, we will provide results and analysis of the conducted research. Reddit is an online platform with a lot of user freedom. Its topics range from social media to political discussions and sports commentary. Any user can post or respond to almost anything. The comments of Reddit therefore differ in content and hopefully provide general constraints for a 'good' or 'bad' comment.

## 1 Introduction

Any piece of text is arguably ambiguous to some extent, which is the reason text is difficult to interpret mechanically. However, with the techniques available in the present day mechanical prediction knows little boundaries. Using a large database of comments we will apply machine learning techniques to train a programme to predict the quality of a comment, measured by the public reaction to a comment. The public reaction can either be positive or negative, represented as a 0 for negative or a 1 for positive. By interpreting this database of existing data, a classifier is made which, when trained, provides a reliable prediction.

As previously mentioned, comments, like any piece of text, are subjective and even more freely interpretable when intonation and other aspects of speech are lacking. Text comments are either appreciated or disliked by the public and the same comment could be appreciated differently in a different context. Hence, predicting the response to a comment by examining only the text is no trivial task. However, there could be something else that defines a comment that is likely to be appreciated and if not there is at least a probability to be found

by interpreting an entry with a classifier trained by the large database.

## 2 Prior literature

## 3 Data

Online platform 'Reddit' calls itself 'the front page of the internet'. As it is almost 14 years old the amount of content that can be found on the platform is colossal. Currently it has 1.2 million 'sub-reddits' (topics), which are frequented by a large amount of users. Additionally, these users comment on existing posts. Generally, one post contains multiple comments. Due to the vast amount of data and the versatility of the content, which ranges from political debates to humorous content, Reddit is an ideal platform to base our research on. The database used contains two million positively and two million negatively received comments. As well as score, parent comments

Inherently, the task at hand is a simple classification task; learning whether or not a comment will be received positive or not. However, the use of language is connected to context. Consequently, the relation between the parent comment and the entry is very important when deciding whether the response to a comment will be acclaiming or oppositely so.

## 4 Model

With the use of Tensorflow, a high end programming language for neural networks, a classifier was created that is able to predict the public reaction to a reddit comment with 65% accuracy. We chose to work with a neural network because neural networks are able to handle more complex classification problems. This particular problem would be more difficult to solve using more intuitive classifiers such as a naïve bayes or random forest classifier.

Our dataset of four million entries is split into fractions of one hundred thousand entries. Each fraction contains an equal amount of positive and negative entries and is mixed randomly.

## 5 Results

## 6 Analysis

## 7 Conclusion



Figure 1: The Universe

## 8 Conclusion

“I always thought something was fundamentally wrong with the universe” [1]

## References

- [1] D. Adams. *The Hitchhiker’s Guide to the Galaxy*. San Val, 1995.