

## **Using Machine Learning to Study YouTube Comedy Slam Experiment Data**

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The YouTube Comedy Slam Experiment was based around providing two videos side-by-side to the participants and asking them to select one that appeared to be “funnier” than the other. The goal of my research was to, first of all, determine the correlation between the “comedic” nature of the videos and their sentiment (the mood polarity), and second of all, to compare the classical Max Entropy Machine Learning (that builds a simple bag of words) to Deep Learning and how their results would differ for this specific research. To acquire the results for the first half of the experiment, where the focus was on examining Max Entropy, each video from the experiment was parsed to extract its title and comments (if any). A classifier was thereafter trained on ~11,000 videos to determine whether or not videos’ titles, along with comments, within the remaining dataset of 434 elements could be deemed “funny”. The results were compared to the results of analysing the sentiment of the same dataset (“positive” or “negative”) using two classifiers - one trained on Netflix film reviews and one trained on tweets. After compiling all results, it could be gathered that “positive” videos are mostly classified as “not funny”. The final training accuracy of all three classifiers was rather high. However, the “Comedy” model did not seem to perform greatly due to the small size and messy nature of the dataset. The latter half of the experiment involved doing the same kind of analysis, but this time using Recurrent Neural Networks. Recurrent Neural Networks are considered to be the best way to analyse text as they allow for consideration of context. In this case the result was opposite – most “positive” ads were classified as “funny”, which certainly is more intuitive. Although the final accuracy in this case was slightly lower than that when using Max Entropy, it can be concluded that, if we are to experiment with parameters further and train models for longer on a server, we will achieve stellar results. It is therefore safe to conclude that funny videos from the experiment can also be classified as positive, and that Recurrent Neural Networks are generally better for analysing opinionated text extracted from the media.