Sentiment Analysis of YouTube Video comments

BY Sayed Abd-Eleleem
Eslam Ragab
Hesham wazer

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- Related Work
- Methodology
- Experiments
- Conclusion and Future Work
- References

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- the post Sentiment analysis
- social media Sentiment analysis
- the news Sentiment analysis

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Introduction

What is the Sentiment analysis ?

Sentiment analysis (SA) is the area of concern among research communities in recent years as millions of people share their experience on different issues in the form of opinions, suggestions, comments, feedbacks, etc. In this big data era, the massive amount of data generated by social sites, online shopping sites, etc., are considered for high business value. In recent years, people from different fields like researchers, engineering, medical, educationist, business, film industries, hotels, and even homemakers are using videos as a medium of learning .

con..Introduction

Why the Sentiment analysis on YouTube ?

YouTube is the most used online video repository where videos are uploaded continuously by millions of users (companies, educationists, sports, medical, film industry, private persons, etc.) [1, 7, 8]. The relevancy and effectiveness of shared videos on YouTube successively draw the attention of different communities. To make YouTube more interactive, it allows users to express their opinion on viewed videos by rating through like/dislike and sharing comments [9, 10, 11]. The tracking of user's ideas using reviews of the specific video has attracted the research communities in recent time

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Related Work

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Methodology

Methodology (1)

Linguistic Inquiry and Word Count (LIWC)

LIWC (Linguistic Inquiry and Word Count) is a **text analysis program** available for purchase. It calculates the degree to which various categories of words are used in a text, and can process texts ranging from e-mails to speeches, poems and transcribed natural language in either plain text or Word formats. A free, minimalist web version is available through the website.

Methodology (2)

Mean Daily Views

To measure human patterns of attention, we used **the mean daily views** μ. This is the total number of views xv[1 : t] divided by the number of days t for which we count the number of views. In this case, t = 60 as prior work (Yu 2015) suggests that the majority of views occur within this timeframe with the number of views from 60 days to 2 years forming near-horizontal tails

$$\mu = \frac{\sum_{i=1}^{t} x_v[i]}{t}$$

Methodology (3)

Mean Percentage of a Given Emotion E

Under LIWC, each tweet has a percentage reflecting how many words of a given emotion e are present in the tweet te. In order to map the amount of emotion e in tweets back to the original Youtube video, we took the mean of the percentage of the given emotion e (e.g "anger") in all tweets related to a given video v.

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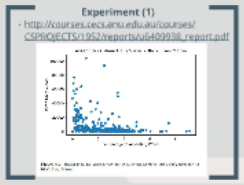
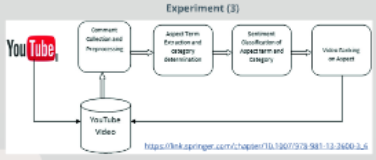
Other Methodology (3)

- Popularity Scale
- Relative Engagement
- Pearson's Correlation Coefficient

4

Experiments





Experiment (1)

- http://courses.cecs.anu.edu.au/courses/CSPROJECTS/19S2/reports/u6409938_report.pdf

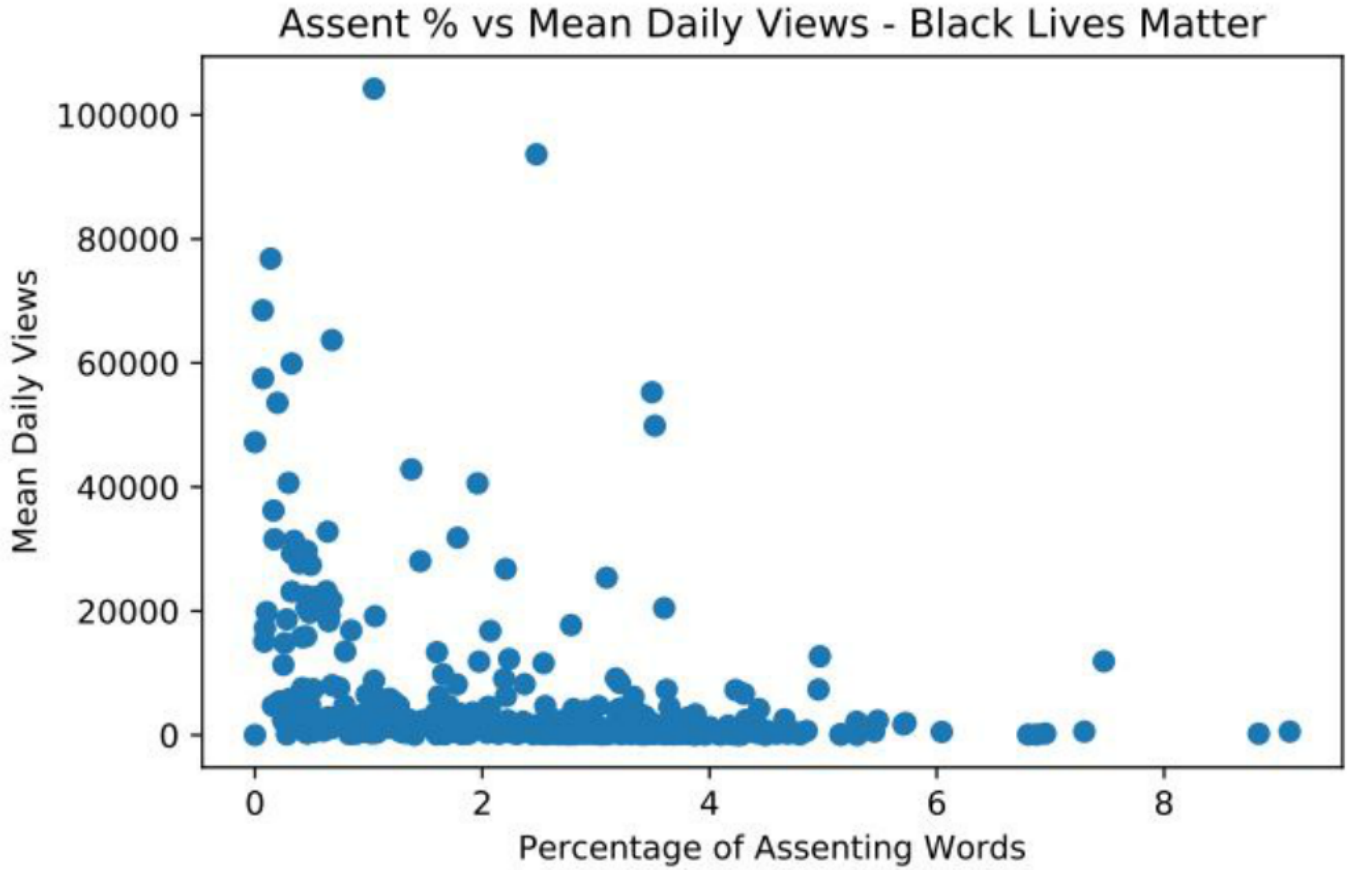
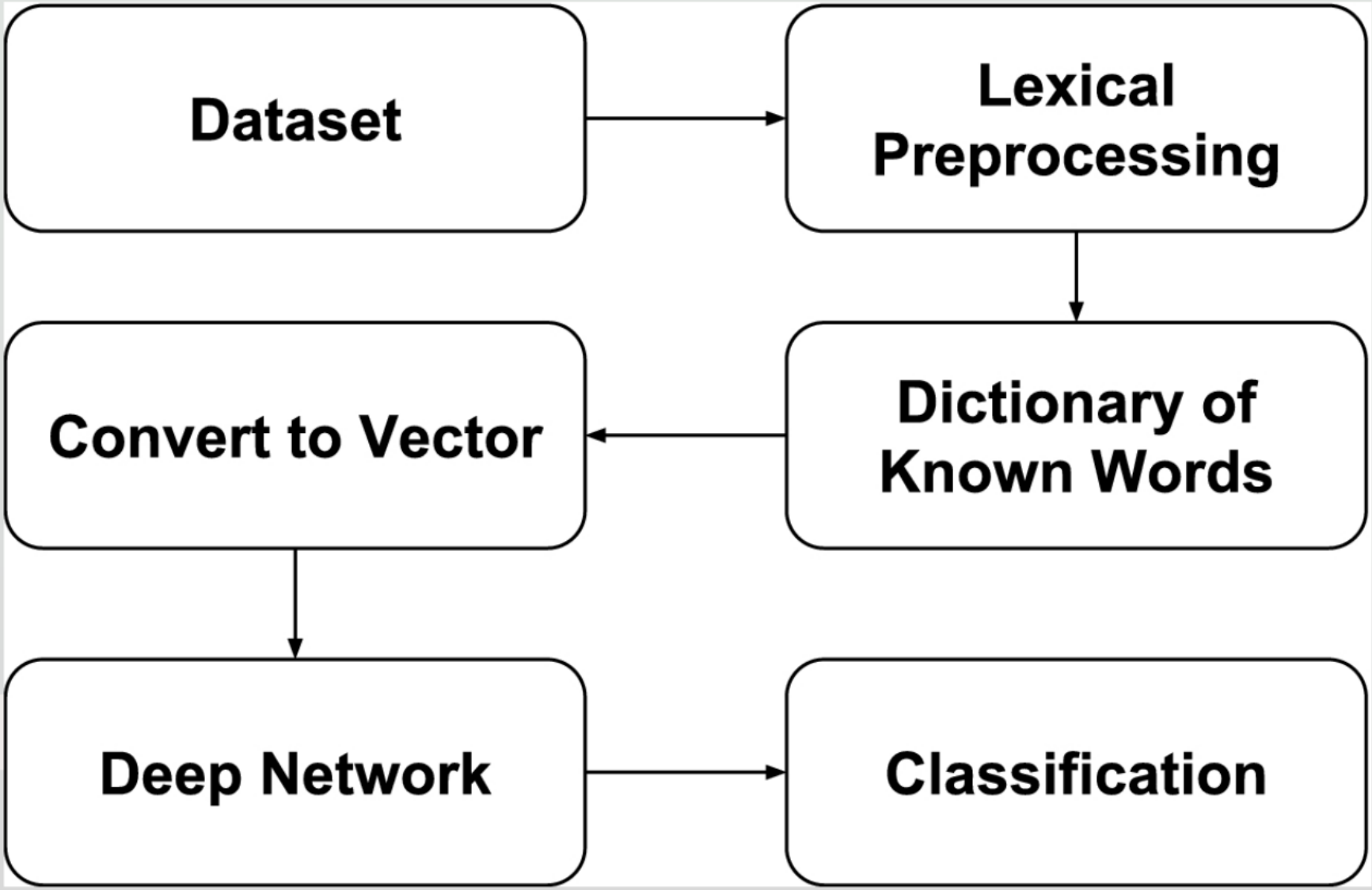


Figure 5.4: Scatter plots for *mean percentage of assenting words* vs *mean daily views* for the Black Lives Matter.

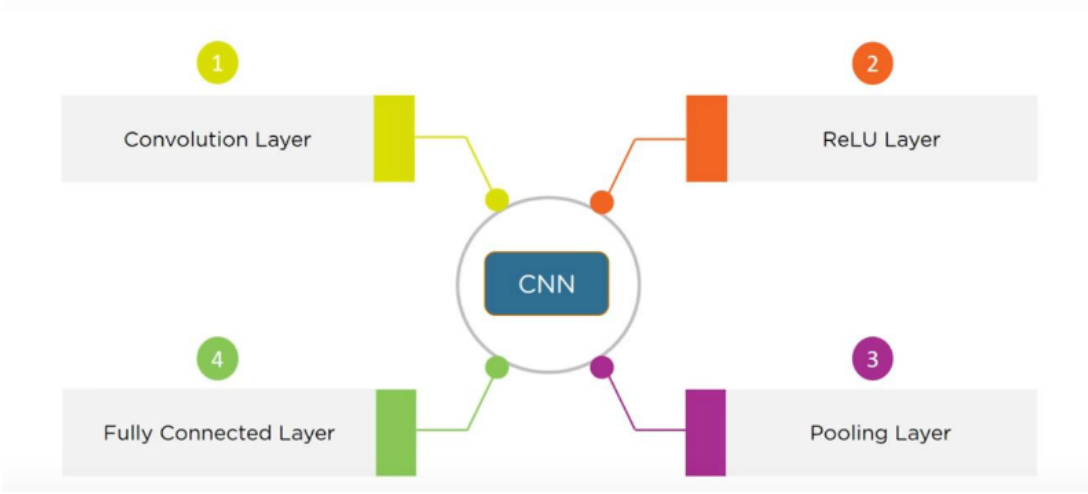
Experiment (2)

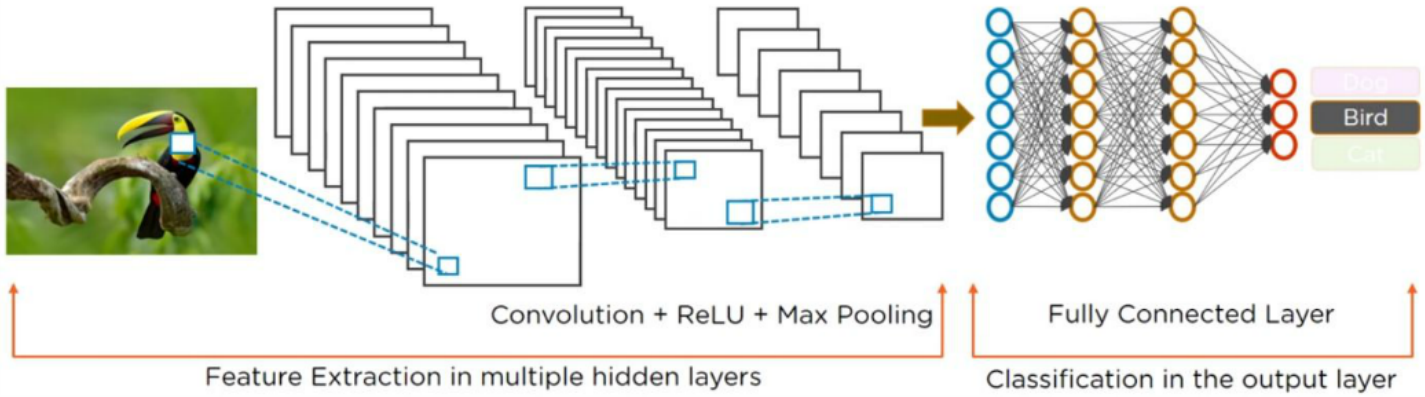
- https://link.springer.com/chapter/10.1007/978-3-030-20912-4_51



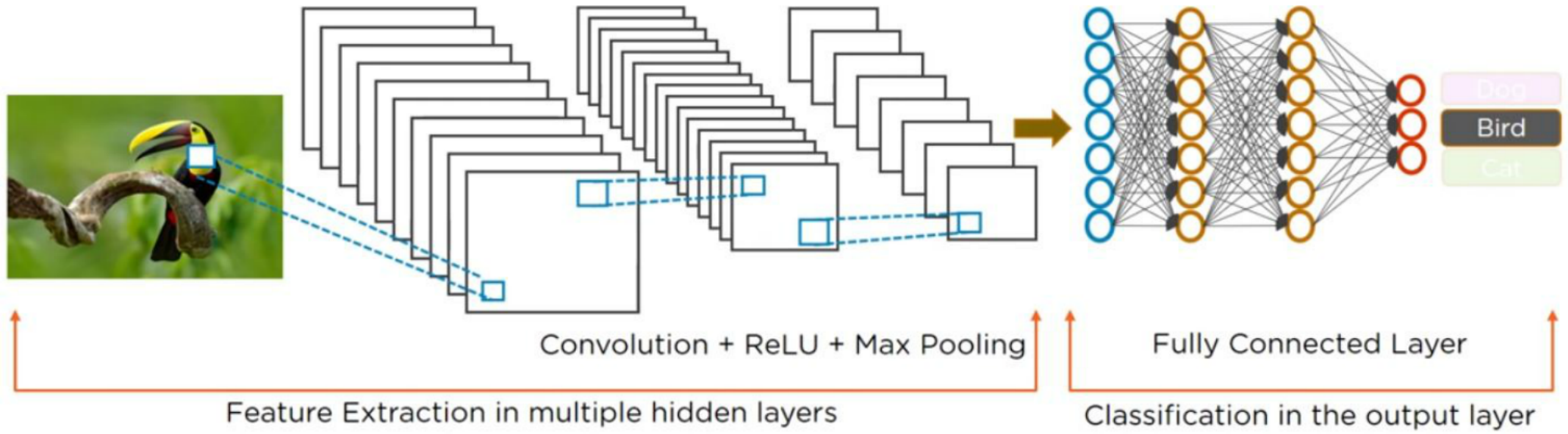
con..Exp 2

- In this experiment they use Convolutional Neural Network Tutorial (CNN) that Consists of four layers :-

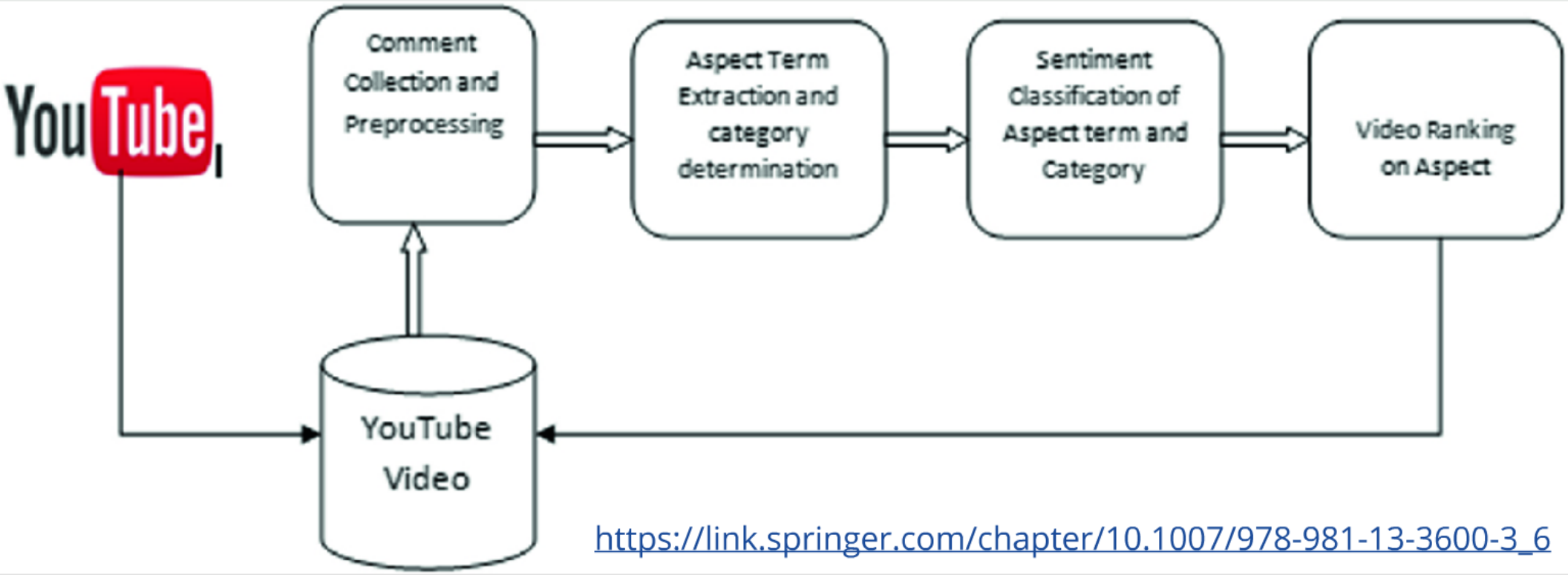





4
Fully Connected Layer
3
Pooling Layer


Dog
Bird
Cat
Convolution + ReLU + Max Pooling
Fully Connected Layer
Feature Extraction in multiple hidden layers
Classification in the output layer

Experiment (3)



https://link.springer.com/chapter/10.1007/978-981-13-3600-3_6

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Conclusions and Feature Work

- Assent in external promotion appears to have a negative effect on the number of mean daily views for all videos irrespective of topic. Meanwhile, other emotions can also affect mean daily views but their effects vary widely depending on the topic at hand.
- Unlike views, relative engagement is largely unaffected by emotion. This may indicate that external promotion has a lesser effect on engagement in comparison to attention.
- The exception appears to be videos in the Muslim Ban dataset which are positively correlated with anger and negative emotion, and negatively correlated with assent.
- Finally, while the emotion in external promotion increases popularity within a social media movement, there is not sufficient evidence claim that this emotions also creates
- a shift in popularity scale.

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