YouTube Videos Likeability Predictor

Data Science Programming (ISM 6930)
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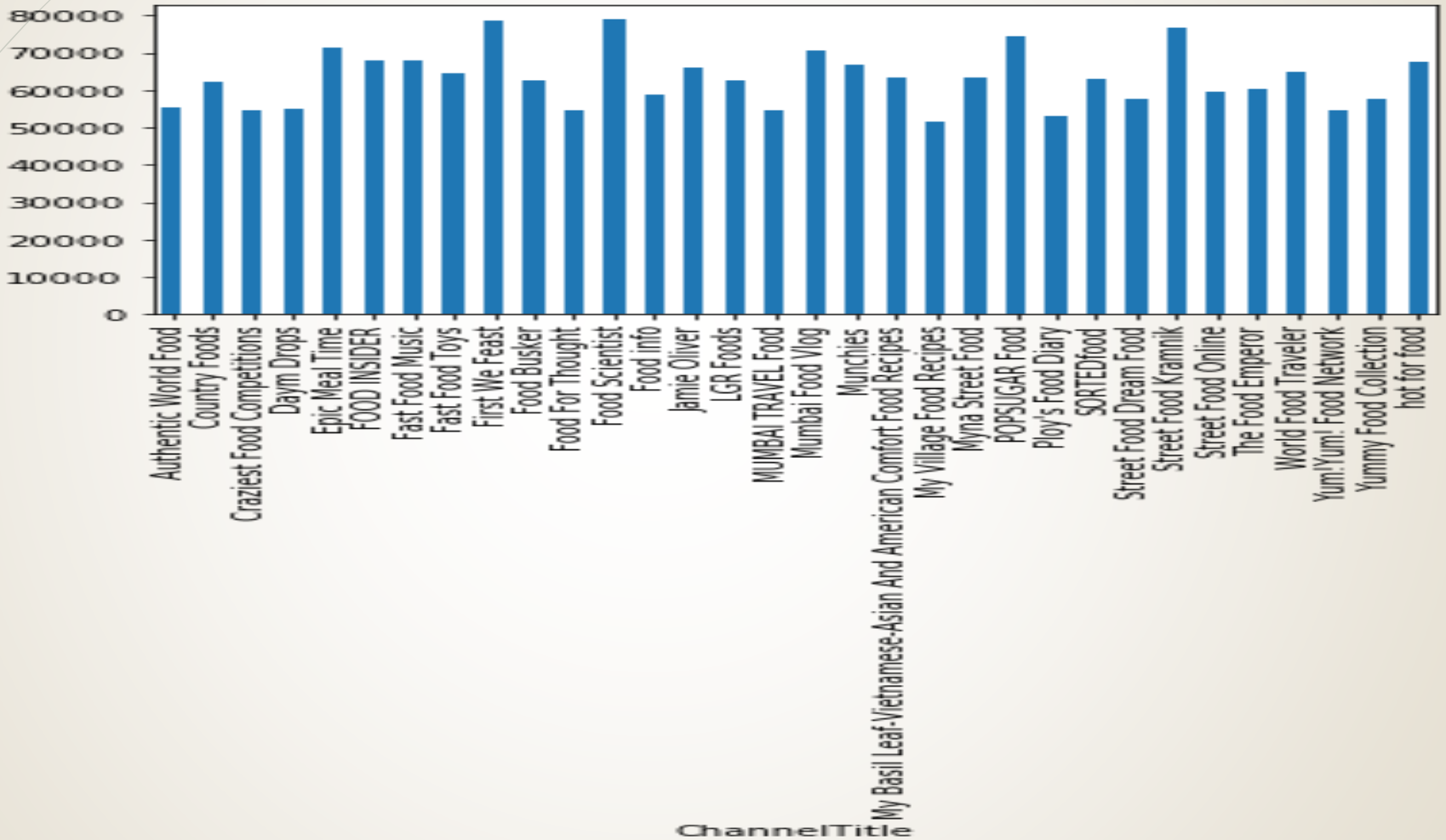
Motivation

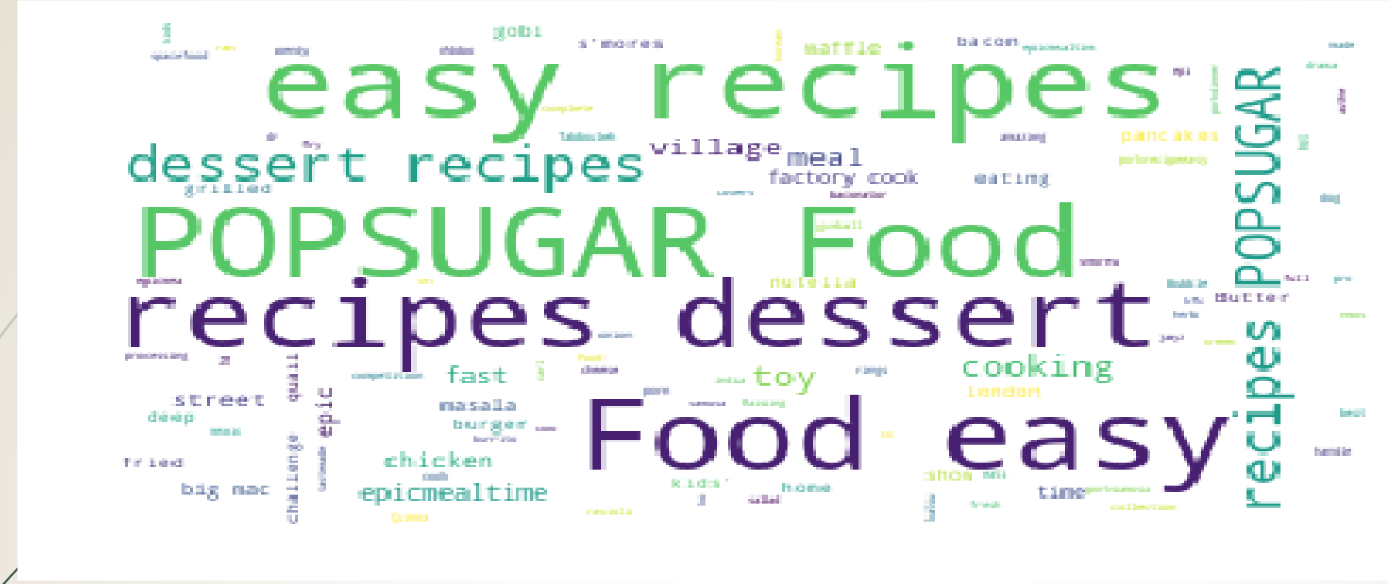
- Over the past 5 years YouTube has paid out more than $5 billion to YouTube content creators.
- With more and more companies turning to YouTube influencers to capture the millennial audience, getting people to watch your videos on YouTube is becoming increasingly lucrative.
- Our goal is to create a model that can help influencers predict the likeability for their next video.

Data Preprocessing

- We leveraged Google Developer Console's YouTube Data API functions.
- Using various functions for fetching Video and video related metadata through channels and playlists.
- Performed Sentiment Analysis for the comments of the videos and added count of comments as positive, negative and neutral to the existing data as new FEATURES.
- Calculated the dependent variable i.e LikePerView and View-Difference using features like LikeCount, ViewCount and PreviousViewCount

Exploratory Data Analysis

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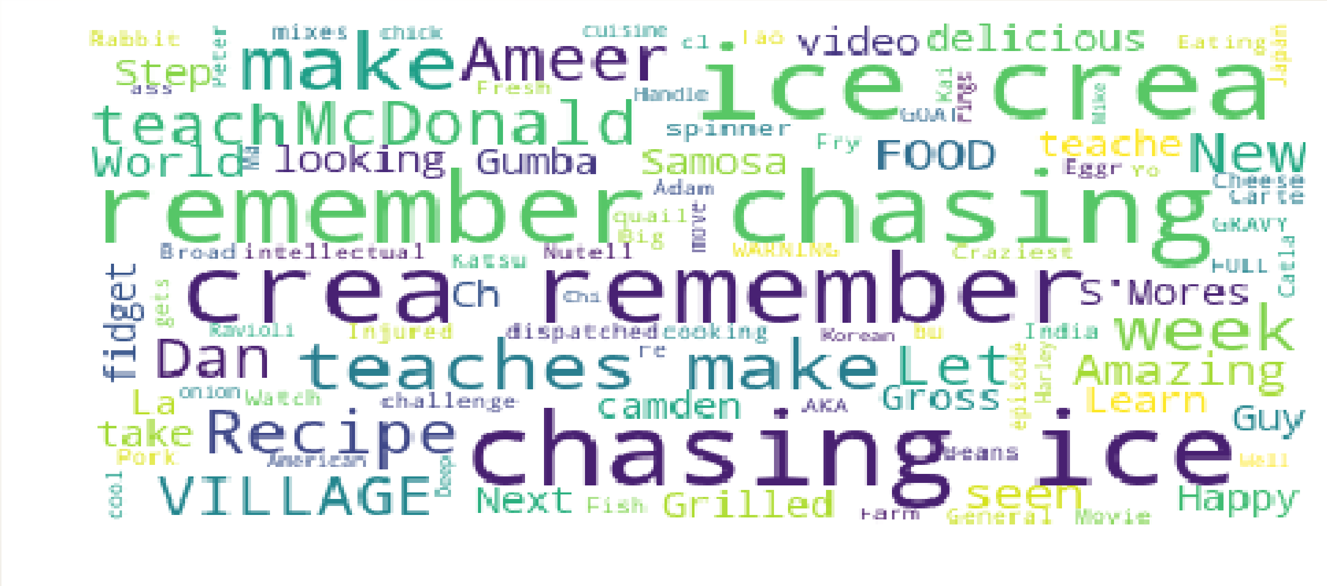
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Machine Learning Models

- Using models like GradientBoostingRegresor and XGBoostRegressor we were able to predict Likeability of a video based on features like:
  - Channel View count
  - Channel subscriber count
  - Channel age
  - Previous video views
  - Video age
  - Duration

OBSERVATION & RECOMMENDATIONS

- Predicting Views was what we started with initially soon to realize it depends on many other factors like content etc.
- One of the important observations were that just uploading a video and waiting for days to pass by so that views can increase is a bad idea, one factor which affects views or likeability of a video in general is the CHANNEL.
- Another point would be the DURATION of the video, if the video is of a shorter duration and conveys sufficient information it will get views and likes. That's kind of obvious!

Future Scope

- Thumbnails and Title are features that we initially planned to used but couldn't. If running deep learning models can extract hidden features then that might be useful to increase likes.
- Another factor contributing to likes of videos would be content, by using models like topic modelling and finding its relevance with respect to the topic can be used as a feature.
- This methodology can be extended to different genres of videos.

References

- https://towardsdatascience.com/youtube-views-predictor-9ec573090acb
- All API calls are referred from this source: https://developers.google.com/youtube/v3/docs/videos
- Progress Bar code referenced from: https://github.com/allenwang28/YouTube-Virality-Predictor/blob/master/scripts/get_last_video_count.ipynb
- Emoji removal: http://stackoverflow.com/a/13752628/6762004
- Code:

  https://github.com/allenwang28/YouTube-Virality-Predictor

THANK YOU!!!