



# Why the NLSS?

- Twitch is a live streaming service for video games
- Comments serve as a way for viewers to directly interact with streamers in real time
- Streamers may have conversations with a collective audience
- Familiar with jargon

*'it was cobalt you foolish egg, Nek is innocent'*

*'TB is the only one truly blind meta'*

*'it's probably more likely that there is a host advantage'*





# Twitch Comments



As a stream plays, the audience can post comments to a scrolling chat

Act like a stream of consciousness

# Stream Information

(November 16, 2017) (NL, rob, LGW, Sin)  
Geoguessr, [Ultimate Chicken Horse](#), [Pinturillo](#)

(November 15, 2017) (NL, rob, LGW w/ Baer, Kory, MALF)  
Geoguessr, [Golf It](#), [Jackbox: Quiplash](#)

(November 13, 2017) [Nick View](#) (NL, RLS, JS, rob w/ LGW, Sin HCJ)  
[Human Fall Flat](#), [More Human Fall Flat](#), [Jackbox: Survive the Internet](#), [Fibbage](#), [Monster Seeking Monster](#)

(November 9, 2017) [Nick View](#) (NL, RLS, CS, rob w/ Baer)  
[Fortnite Battle Royale](#), [Wild Animal Racing](#), [GeoGuessr](#), [Golf It](#)

(November 8, 2017) [Nick View](#) (NL, RLS, rob w/ LGW, Baer, Sin, HCJ)  
[Human Fall Flat](#), [More Human Fall Flat](#) [Jackbox: Monster Seeking Monster](#), [Fibbage](#)

(November 6, 2017) [Nick View](#) (NL, RLS, JS, rob w/ LGW)  
[Getting Over It](#), [Human Fall Flat London 2012](#)

## [NLSS Dockets](#)

588 entries when collected

Contains dates, players, and games

## [Sullygnome](#)

441 entries when collected

Stats on viewership, followers, length of stream

Stream ID	Avg Viewers	Peak view	Followers	Followers	Views	Views per
13	4636	5390	36	2.77	5984	460.31
12	5245	5988	49	4.08	4881	406.75
11	2718	3319	48	4.36	2160	196.36
13	4911	5325	45	3.46	4793	368.69
13	3074	3527	97	7.46	3380	260
13	4562	5363	51	3.92	4818	370.62
13	4596	5601	48	3.69	6174	474.92
12	2557	2980	52	4.33	3881	323.42
14	4683	5555	89	6.36	3478	248.43
13	3304	3604	174	13.38	5416	416.62
14	4498	5639	81	5.79	6323	451.64
13	5153	5872	110	8.46	5880	452.31

# Comment Collection

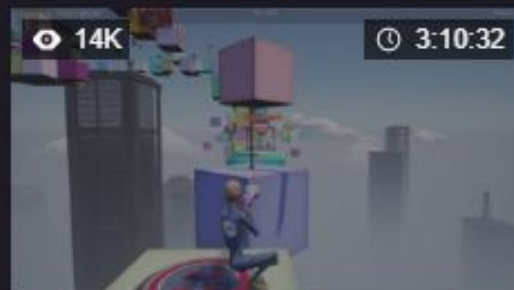
- Compile list of Video IDs
  - <https://www.twitch.tv/videos/204916429>
- Use 'rechat-dl' to download JSON comments
  - This took a LONG time
- Build comment DF with date, username, message values
- Some videos didn't have comments tracked, data gets cut



**The Northernlion Live  
Champions of Fire Practic...**  
Nov 21, 2017 · Northernlion



**NLSS [11/20/2017]**  
Nov 21, 2017 · Northernlion



**The Northernlion Live Super  
Show!**  
Nov 20, 2017 · Northernlion



**Friday Morning Egg**  
Nov 17, 2017 · Northernlion



**Friday Morning Egg**  
Nov 17, 2017 · Northernlion



**The Northernlion Live Super  
Show!**  
Nov 16, 2017 · Northernlion

# Sentiment Analysis

- NLTK has Vader built in
- Built for online comments
  - Handles emoticons, internet slang
- Looks at lexical items, punctuation, capitalization, modifiers, 'but', trigrams
- Lexical, not machine learning
  - Can't handle unknown words
  - Can't handle sarcasm

it's really exciting watching them shoot the same  
demon frogs over and over again for an hour

compound: 0.2716

neg: 0.115

neu: 0.718

pos: 0.167

# Sentiment Analysis

- Label every comment as pos/neg
- Pos: 624,560, Neg: 625,703, Unk: 3,545,878
- Issues with unknown words
- [Live notebook](#)

## POSITIVE

I love the zombie animation

compound: 0.6369

neg: 0.0

neu: 0.417

pos: 0.583

## NEGATIVE

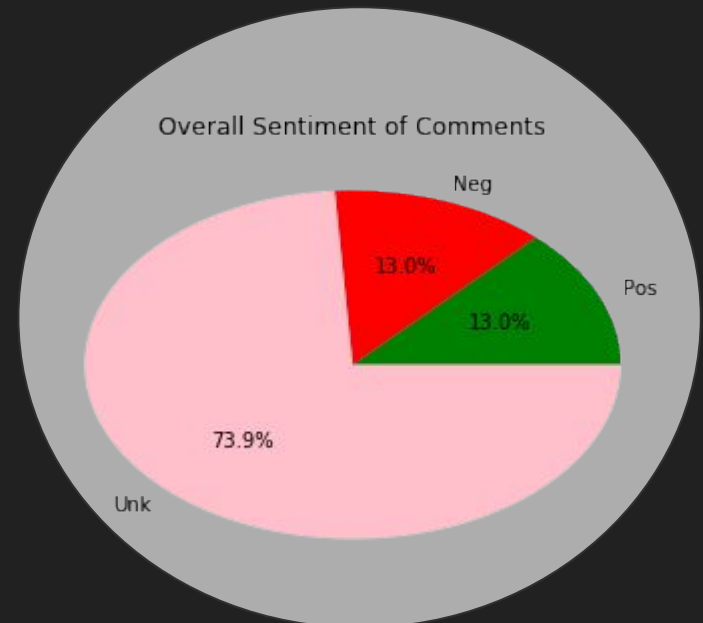
I DEMAND TOWERS

compound: -0.128

neg: 0.6

neu: 0.4

pos: 0.0





# Machine Learning

Goal: Predict the positivity of a videos comments based on stream info

X values: crew, docket, views/followers gained, new game

Y value: percent of positive comments in video

Least positive video: 41% positive

Most positive video: 60% positive

# Take Away

- Start with a large corpus, it shrinks!
  - 588 videos to 200
- Twitch comments shape experience of show
- ML could help increase usable comments
  - Add to dictionary
- Positive/Negative split smaller than expected

