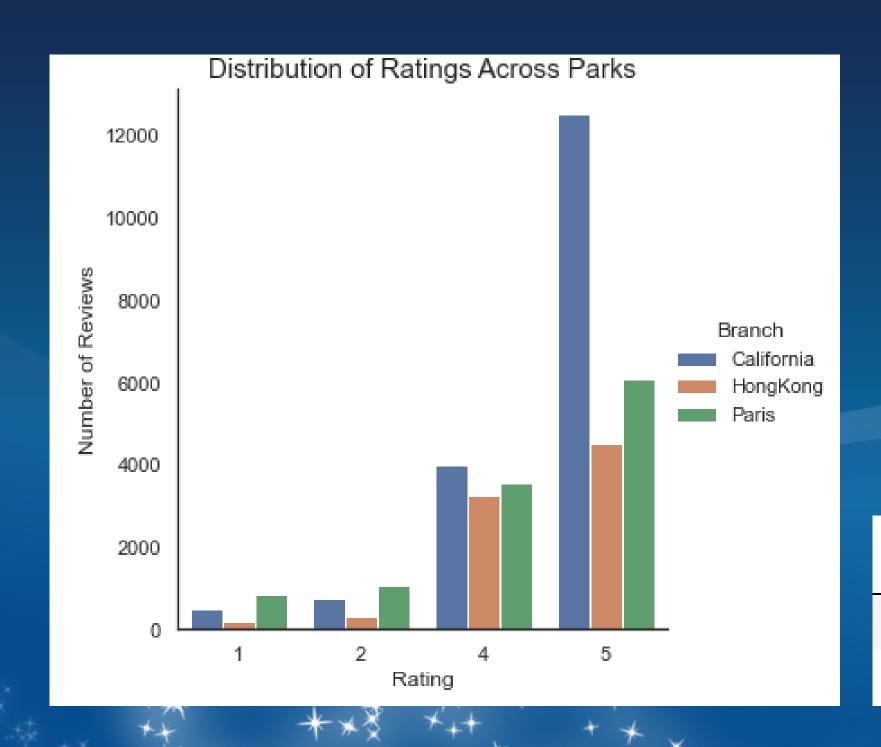


Are Disney Parks truly Magical?

- 42,656 reviews on Disney Parks (California, Paris, Hong Kong)
 - Kaggle
 - Primarily textual data
 - 2010 to 2019
- *Sentiment Analysis of all the reviews

*		Review_ID	Rating	Year_Month	Reviewer_Location	Review_Text	Branch
	39465	169194342	3	2013-7	United Kingdom	I was at Eurodisney under sufferance. I was ve	Disneyland_Paris
K K	13625	452476394	4	2017-1	United States	Let's star with it only get a four because my	Disneyland_California

Categorize Reviews



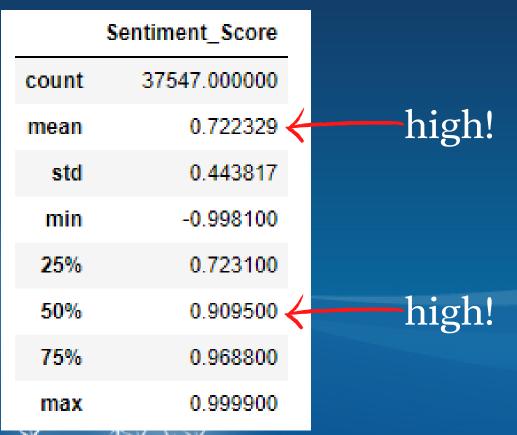
- Add category 'Rating_Type'
 - Remove neutral ratings '3'
 - 'Positive' (4-, 5-star reviews)
 - 'Negative' (1-, 2-star reviews)
- ~90% 'Positive'
- ~10% 'Negative'

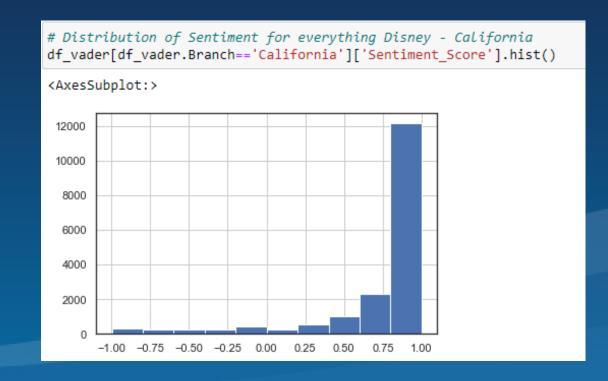
Rating	Reviews	Branch	Rating_Type
4	Great experience Space Mountain is by far t	California	Positive
5	Had a wonderful time visiting disneyland Paris	Paris	Positive

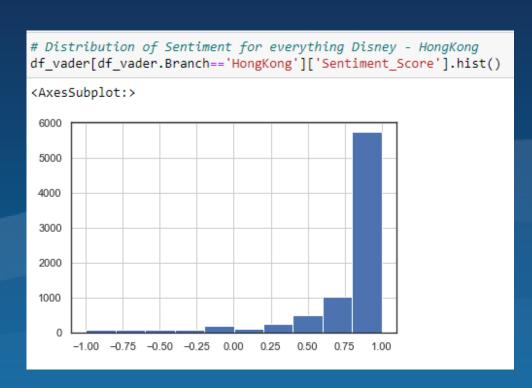
Sentiment Analysis with VADER

Compound score normalized between -1 (most extreme negative) and +1 (most extreme positive)



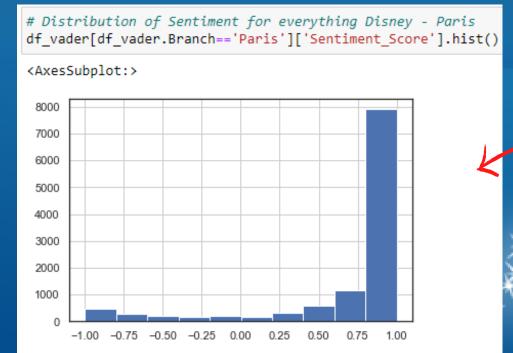






still positive!

- Average sentiment (Positive): 0.79329
- Average sentiment (Negative): 0.05847



More negative sentiment than neutral!

Interesting...

Reviewer_Location	Reviews	Branch	Rating_Type	Sentiment_Score
United States	What made me mad was we normally leave during the afternoon crowds and come back around 6pm but couldn't. There was a special event (Halloween party) thus we couldn't do that. Also, it was so crowded that we only spent a single day in the park and found other (free) stuff to do around LA instead, like going to the beach. As Disneyland closed early, there were no fastpasses available during the afternoon so we ended standing in huge lines. What a waste of time and we'll not be coming back anytime soon. Disneyland is packing in huge crowds so I'm sure they could care less.	California	Negative	0.9669

Reviewer_Location	Reviews	Branch	Rating_Type	Sentiment_Score
United States	so many rides for all ages and sizes! The Indiana Jones ride is my fave along with Pirates of the Caribbean and haunted house are greatspace mountian is a must and when they reopen the matterhorn can't wait to go back agian been there several times!	California	Positive	-0.1984

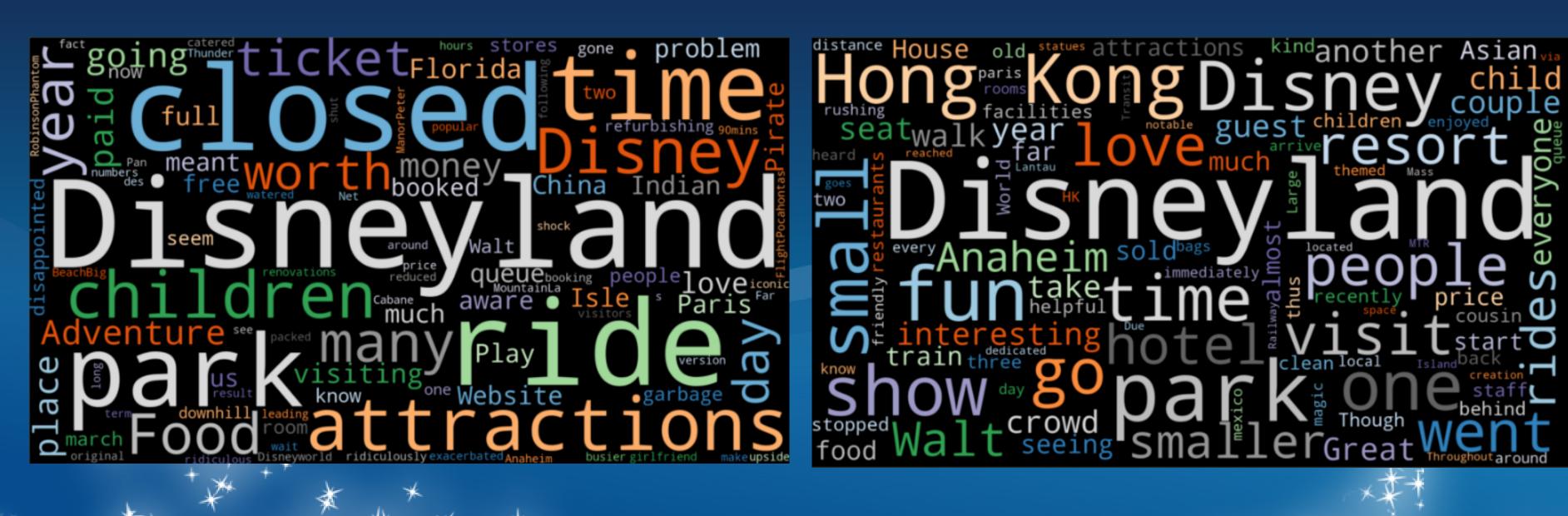
In a fraction of the reviews, the Sentiment_Score did not reflect the Rating_Type

Top 200 Words in Reviews





Top Words in Positive/Negative Reviews Can you tell?



Top Words in Positive/Negative Reviews

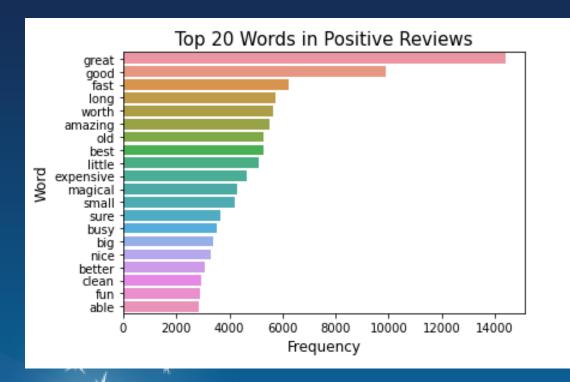
Negative

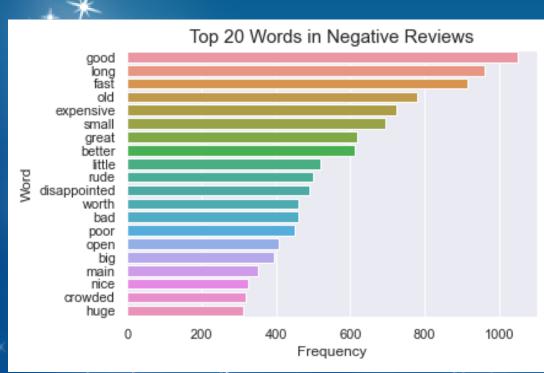
Positive



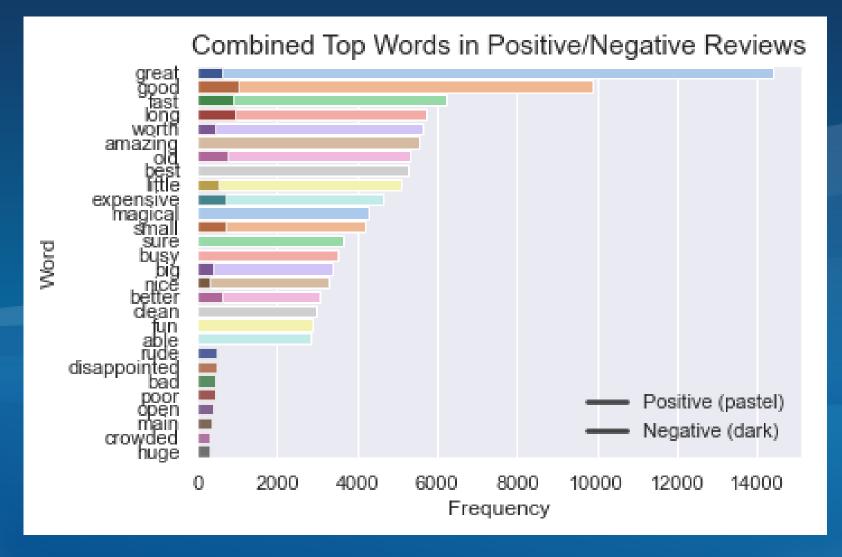


Top Words in Positive/Negative Reviews





• spAcy to preprocess, tokenize, extract adjectives



Exclusively:

Positive: 'amazing', 'best', 'magical', 'clean', 'fun'

Negative: 'rude',

'disappointed', 'bad',

'poor', 'crowded'

Top Words in Positive/Negative Reviews

- Dependency parsing with spaCy
- Finding adjective modifiers for specific nouns

"Food"

```
POSITIVE:
[('own', 312),
 ('fast', 309),
  'good', 176),
 ('great', 129),
  ('expensive', 87),
 ('outside', 43),
 ('best', 40),
 ('available', 39),
 ('decent', 31),
 ('vegetarian', 31),
 ('indian', 30),
 ('chinese', 29),
 ('better', 28),
 ('nice', 28),
  'much', 22),
 ('healthy', 21),
 ('asian', 19),
  'overpriced', 19),
 ('western', 19),
  'delicious', 18)]
```

```
NEGATIVE:
[('fast', 78),
 ('own', 39),
 ('expensive', 36),
 ('overpriced', 19),
 ('poor', 17),
 ('good', 16),
 ('terrible', 16),
 ('bad', 14),
 ('priced', 12),
 ('awful', 11),
 ('decent', 8),
 ('horrible', 8),
 ('mediocre', 8),
  ('same', 8),
  'better', 7),
   'great', 7),
  'hot', 7),
  ('much', 6),
  ('only', 6),
   'available', 5)l
```

```
Positive: 'great', 'vegetarian', 'chinese', 'indian', 'healthy', 'asian', 'western'
```

Reviewers enjoy the variety of food choices

Negative: 'expensive', 'overpriced', 'poor', 'terrible', 'bad', 'awful', 'mediocre'

• Reviewers dislike the price and/or taste of the food

Topic Modeling

- CountVectorizer vs TfdifVectorizer
- LSA vs NMF vs CorEx
- Chosen: CountVectorizer + CorEx with anchored words

```
# Topics with anchored words
topics2 = topic_model2.get_topics()

for n,topic in enumerate(topics2):
    topic_words,_,_ = zip(*topic)
    print(f'{n}: {", ".join(topic_words)}')

0: disney, california, world, walt, downtown, fan, disneyland, fans, southern, original
1: disney, paris, florida, disneyland, orlando, dreams, rer, comparison, typical, states
2: disney, hong_kong, land, disneyland, smaller, compared, mtr, version, compare, scale
3: food, expensive, disney, drinks, drink, quality, prices, options, bring, overpriced
4: parade, fireworks, disney, night, watch, paint, miss, lion_king, floats, amazing
5: ride, park, day, just, time, people, did, rides, hotel, got
```

California: "Original"
Paris: "Typical" - same as "States"
Hong Kong: "Smaller"
Food: "Expensive"
Shows: "Amazing"

Are Disney Parks Magical?

YES!!

But..

- 1. food is expensive ----- bring your own snacks/food
- 2. parks are crowded \longrightarrow go on weekdays, non-holidays

Future Works

- Compare different Sentiment Analyzers (VADER, Flair, TextBlob, etc.)
 - Explore discrepancy between Rating and Sentiment Score
- *Analyze more updated dataset
 - Include ALL parks (Tokyo, Shanghai)