



BrandGuard

Know The Companies You Keep

Michael Klein

Online Marketplace Industry

- Dominated by large companies with high variety and low prices
- How to compete? Convey a strong brand.

Etsy's Brand

Uniqueness
Human Touch
High Quality

Keep Commerce Human

Etsy is the global marketplace for unique and creative goods. It's home to a universe of special, extraordinary items, from unique handcrafted pieces to vintage treasures.

In a time of increasing automation, it's our mission to keep human connection at the heart of commerce. That's why we built a place where creativity lives and thrives because it's powered by people. We help our community of sellers turn their ideas into successful businesses. Our platform connects them with

The Problem

↓ I do agree and think that [Etsy has diluted their brand](#) with all of these resellers. They make Etsy money, so I don't see it changing. :(

↓ The truth is that the Jewelry category is rife with this kind of problem. The [vast majority of jewelry on Etsy is "assembled" jewelry with no actual handmade elements](#). This is not true for most other categories on Etsy however. There are just some categories like jewelry where you have to be extra careful about what you are buying.

↓ This is my biggest peeve with Etsy. As a seller, I also prefer to be a buyer as well, to support other small businesses and shops. Lately, [it's been so diluted with reselling crap that it takes me 4-5 pages of looking before I give up](#) and go somewhere else. I can't even look for handmade jewelry because I don't want to waste my time sorting through the resellers.

Share Report Save

- Etsy should spotlight and promote only the sellers that best align with their brand
- How?

Solution - Analyze Customer Reviews

“I had the pleasure of buying several pieces from him, and each is as **unique** as they are high **quality**. Love dealing with him.”

Unique

Human Touch

Quality

“Sent to me **defective** earrings with broken lock. **Seller lied** about shipping. I recommend avoid this shop.”

"I had the pleasure
of buying several
pieces from him.
The craftsmanship
is incredible"

Brand
Alignment

?



“I had the pleasure
of buying several
pieces from him.
The craftsmanship
is incredible”

What is the
topic?

?

What is the
sentiment?

?

Topic Identification

"I had the pleasure
of buying several
pieces from him.
The craftsmanship
is incredible"

What is the
topic?

?

?

What is the
sentiment?

Topic Identification

Challenges:

- multiple topics per review
- short sentences (<5-10 words)

"I had the pleasure
of buying several
pieces from him.
The craftsmanship
is incredible"

What is the
topic?

?

?

What is the
sentiment?

Topic Identification

Brand Words

unique,
etc...

quality,
craftsmanship,
workmanship,
materials,
etc...

helpful,
etc....

"I had the pleasure
of buying several
pieces from him.
The craftsmanship
is incredible"

What is the
topic?

?

?

What is the
sentiment?

Topic Identification

Brand Words

unique,
etc...

quality,
craftsmanship,
workmanship,
materials,
etc...

helpful,
etc....

Review Words

"I had the pleasure
of buying several
pieces from him.
The craftsmanship
is incredible"

pleasure,
buy,
several,
etc...

craftsmanship,
incredible

What is the
topic?

?

What is the
sentiment?

?

Topic Identification

Brand Words

quality,
craftsmanship,
workmanship,
materials,
etc...



Check Overlap

-

craftsmanship

What is the
topic?

?

?

What is the
sentiment?

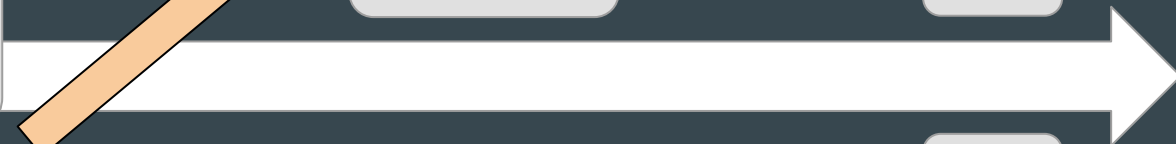
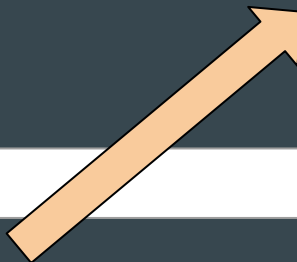
Review Words

"I had the pleasure
of buying several
pieces from him.
The craftsmanship
is incredible"



pleasure,
buy,
several,
etc...

craftsmanship,
incredible



Topic Identification

Brand Words

quality,
craftsmanship,
workmanship,
materials,
etc...



Check Overlap

-

craftsmanship



What is the
topic?

-

quality

?

What is the
sentiment?

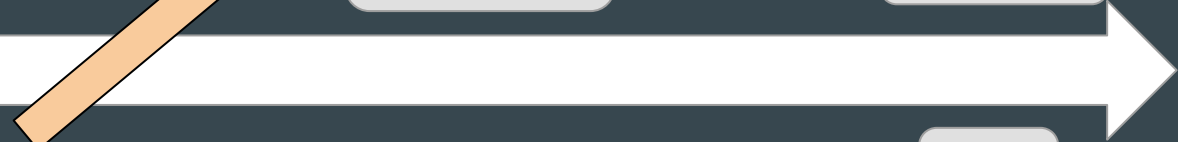
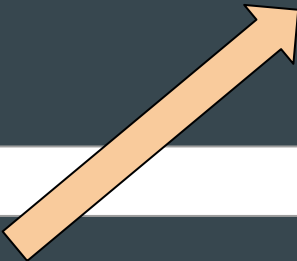
Review Words

"I had the pleasure
of buying several
pieces from him.
The craftsmanship
is incredible"



pleasure,
buy,
several,
etc...

craftsmanship,
incredible



Topic Identification

Brand Words

quality,
craftsmanship,
workmanship,
materials,
etc...

word2vec
model

Brand Words:
"quality",
"craftsmanship",
"materials",
etc

Review Words:
"pleasure",
"buy",
"several",
etc

What is the
topic?

-

quality

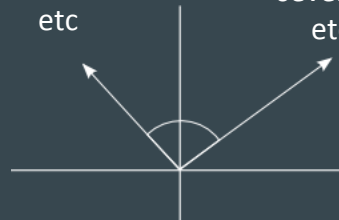
Review Words

"I had the pleasure
of buying several
pieces from him.
The craftsmanship
is incredible"

pleasure,
buy,
several,
etc...

craftsmanship,
incredible

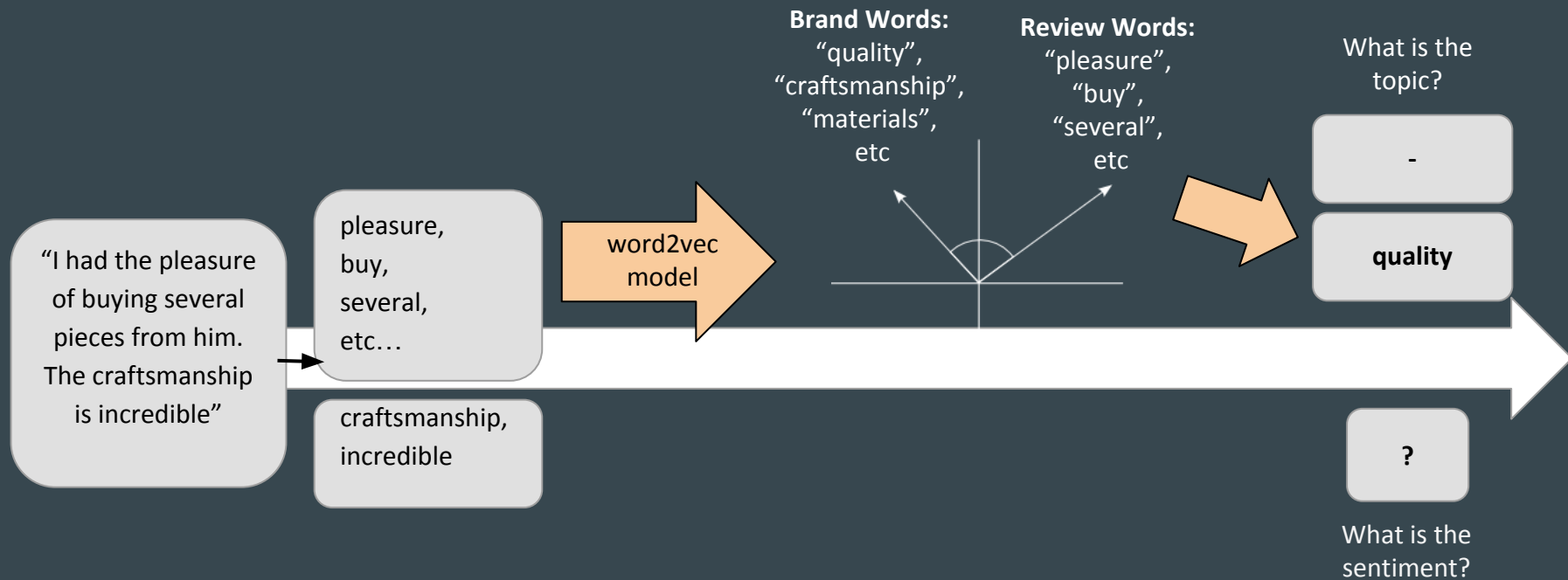
word2vec
model



?

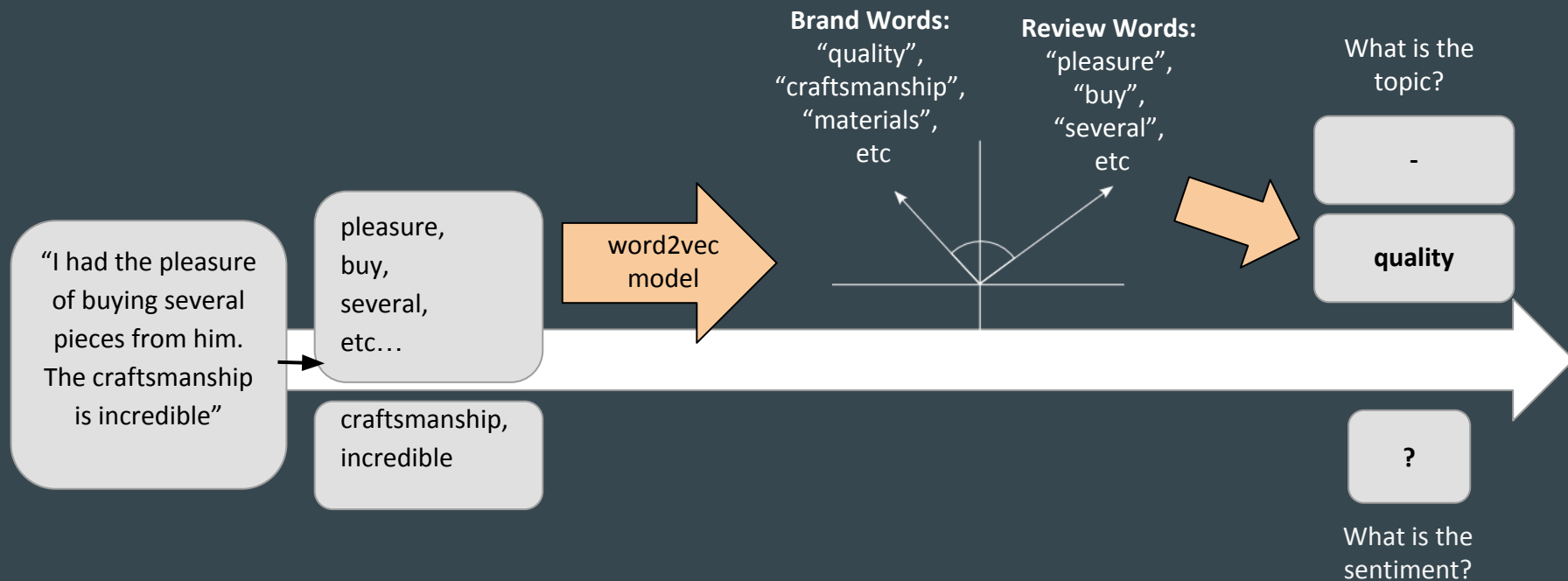
What is the
sentiment?

Topic Identification



Sentiment Analysis

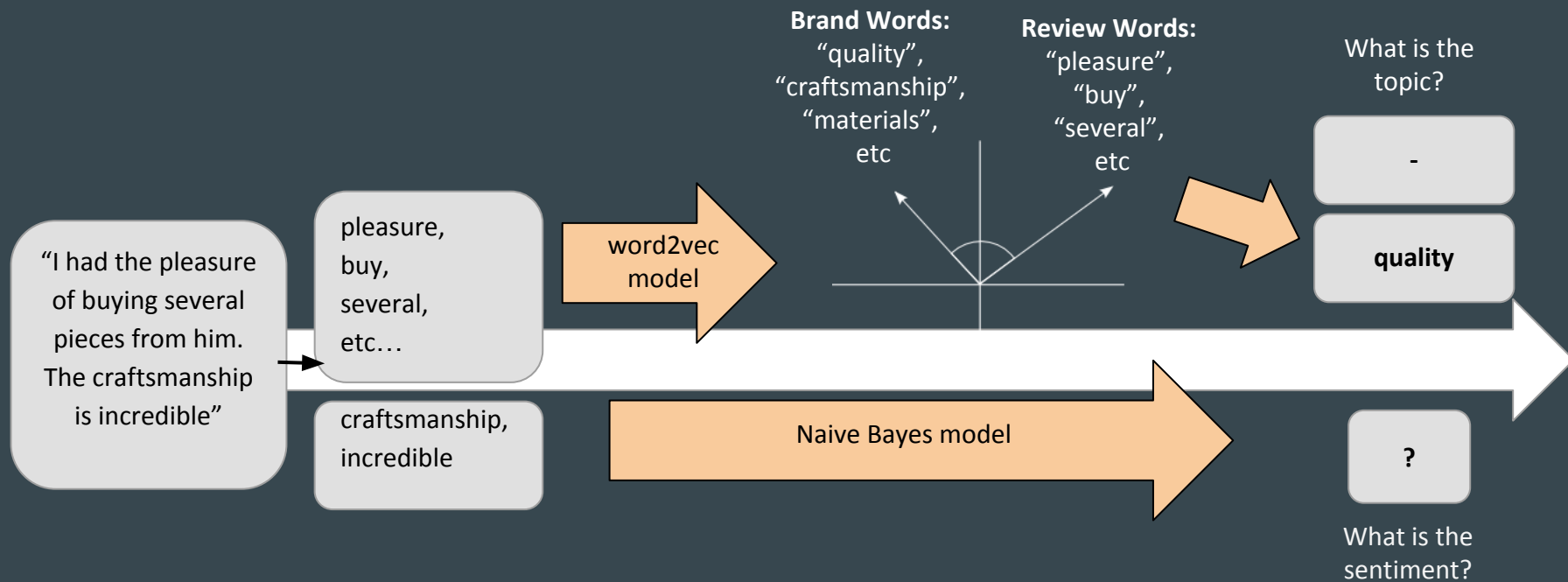
Topic Identification



- Train classifier to predict the probability that a review was given a high rating (4-5 stars)

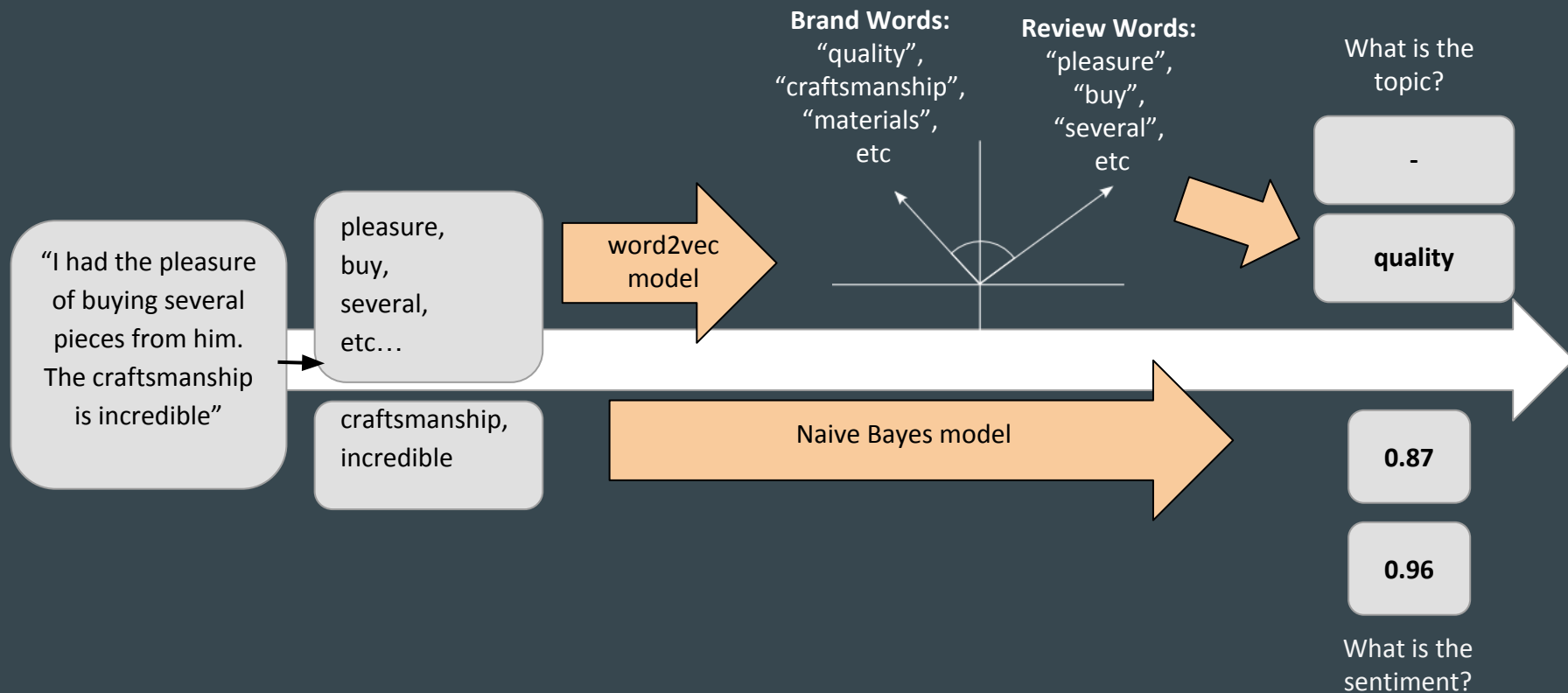
Sentiment Analysis

Topic Identification



Sentiment Analysis

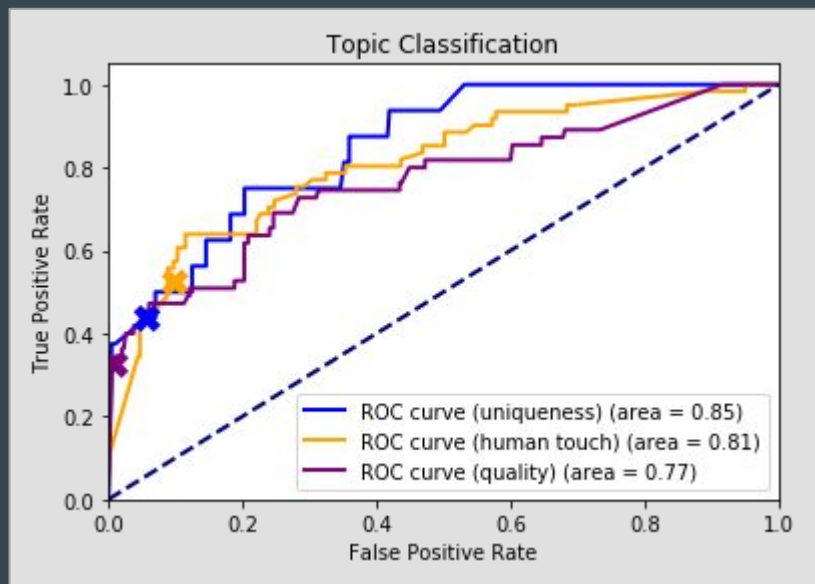
Topic Identification



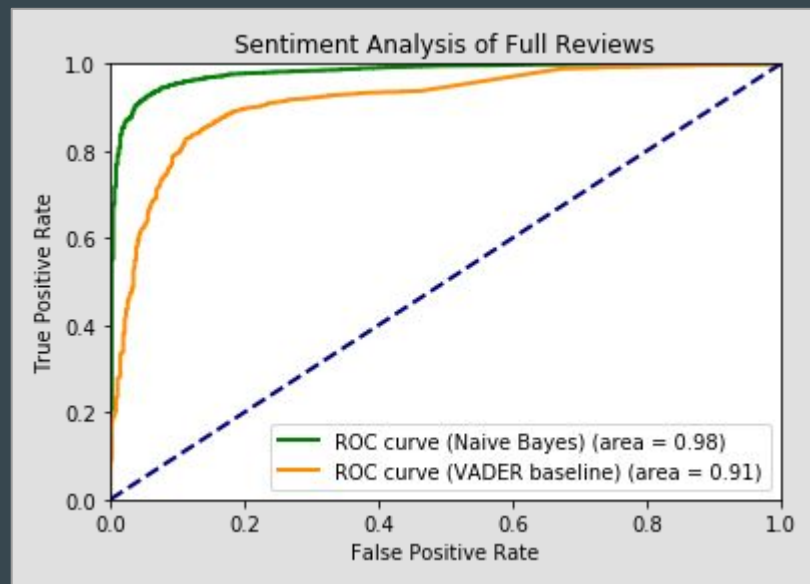
Sentiment Analysis

Performance

Topic Identification



Sentiment Analysis



Sentiment Analysis of Product Reviews

A brief description of the app and how to use it will go here.

Enter Your Review Here

Analyze Review

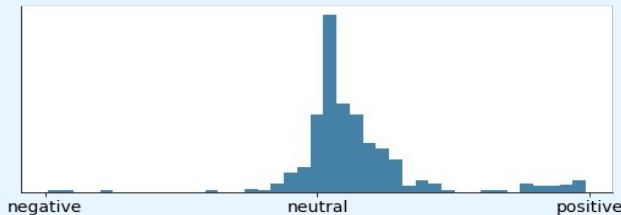
Example Reviews:

I have had the pleasure of buying several pieces from him, and each is as unique as they are high quality. Love dealing with him.

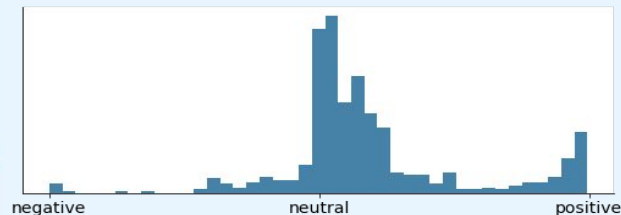
This seller pathological scammer and liar: 1. Sent to me defective earrings, one with broken lock, dirty, scratched, with different design-swirls on the top are different on each earring 2. Seller lied about shipping- see screenshots - said earrings were shipped, and they are not, liar shipped them only after my message Seller refusing admit her fault, arguing and lying. shame, i recommend avoid this shop

Beautiful, exactly like the picture. Fast delivery and very pleasant seller. Thank you.

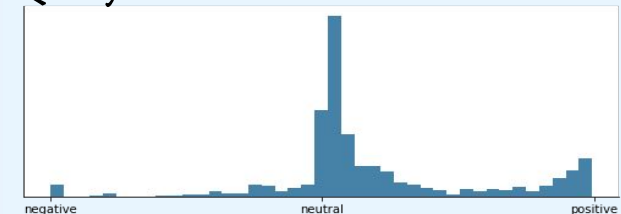
Uniqueness



Human Touch



Quality



Sentiment Analysis of Product Reviews

A brief description of the app and how to use it will go here.

Enter Your Review Here

Analyze Review

Example Reviews:

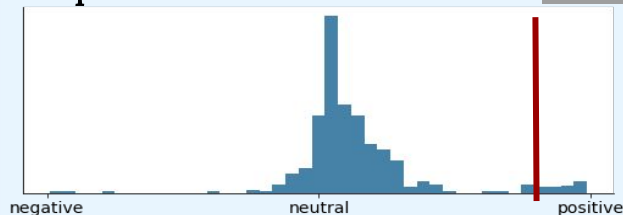
I have had the pleasure of buying several pieces from him, and each is as unique as they are high quality. Love dealing with him.

This seller pathological scammer and liar: 1. Sent to me defective earrings, one with broken lock, dirty, scratched, with different design-swirls on the top are different on each earring 2. Seller lied about shipping- see screenshots - said earrings were shipped, and they are not, liar shipped them only after my message Seller refusing admit her fault, arguing and lying. shame, i recommend avoid this shop

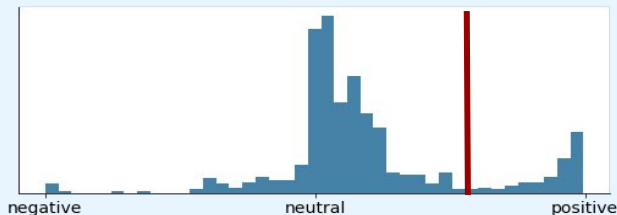
Beautiful, exactly like the picture. Fast delivery and very pleasant seller. Thank you.

**Shops with reviews like this
should be promoted.**

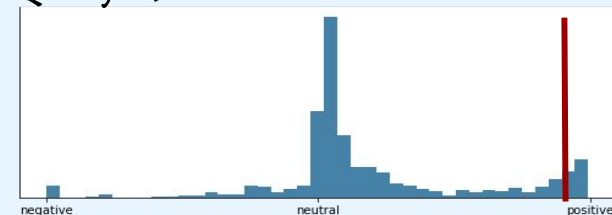
Uniqueness: 0.93



Human Touch: 0.51



Quality: 0.92



Sentiment Analysis of Product Reviews

A brief description of the app and how to use it will go here.

Enter Your Review Here

Analyze Review

Example Reviews:

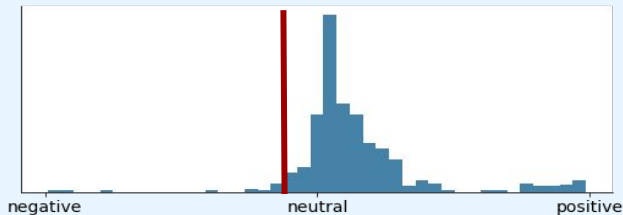
I have had the pleasure of buying several pieces from him, and each is as unique as they are high quality. Love dealing with him.

This seller pathological scammer and liar: 1. Sent to me defective earrings, one with broken lock, dirty, scratched, with different design-swirls on the top are different on each earring 2. Seller lied about shipping- see screenshots - said earrings were shipped, and they are not, liar shipped them only after my message Seller refusing admit her fault, arguing and lying, shame, i recommend avoid this shop

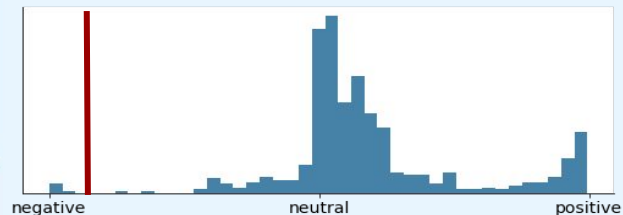
Beautiful, exactly like the picture. Fast delivery and very pleasant seller. Thank you.

**Shops with reviews like this
should NOT be promoted.**

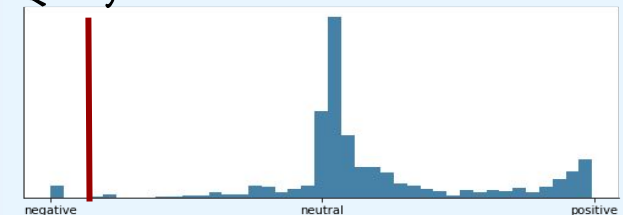
Uniqueness: -0.14



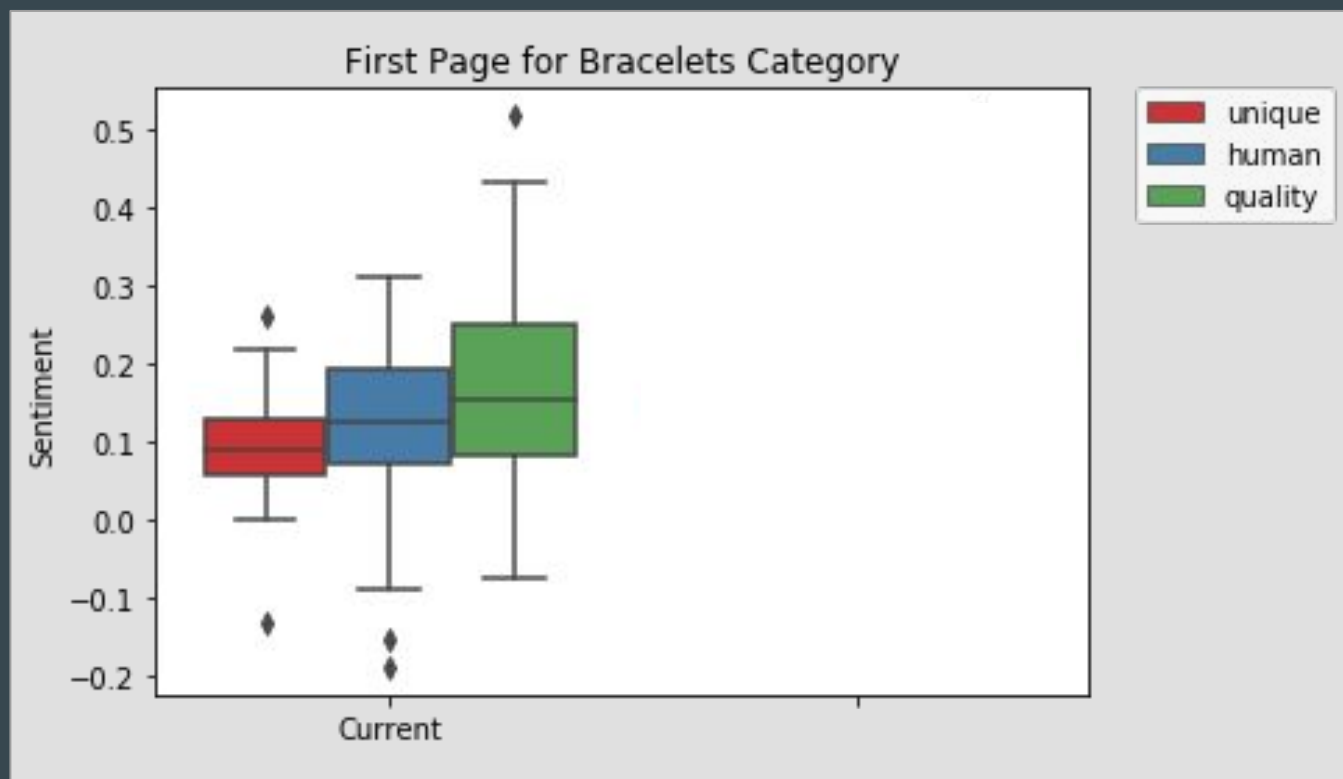
Human Touch: -0.86



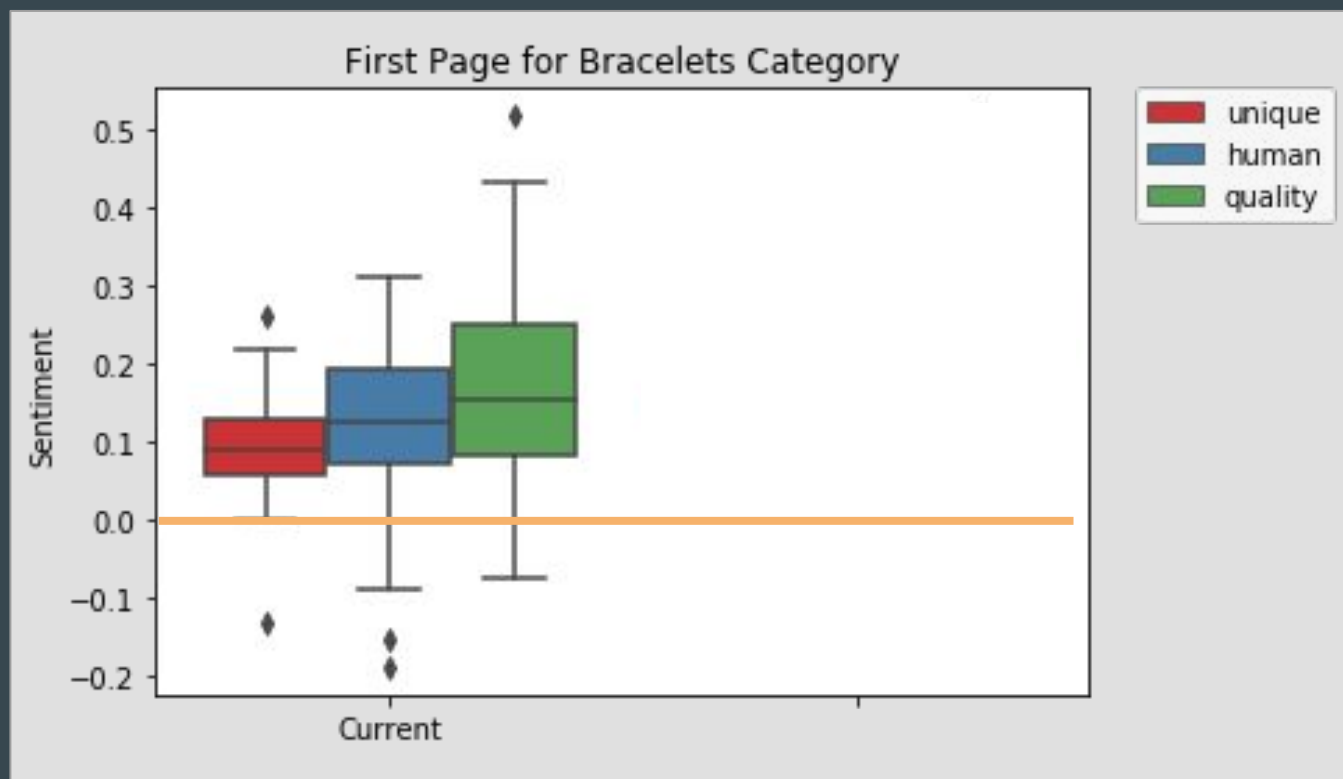
Quality: -0.88



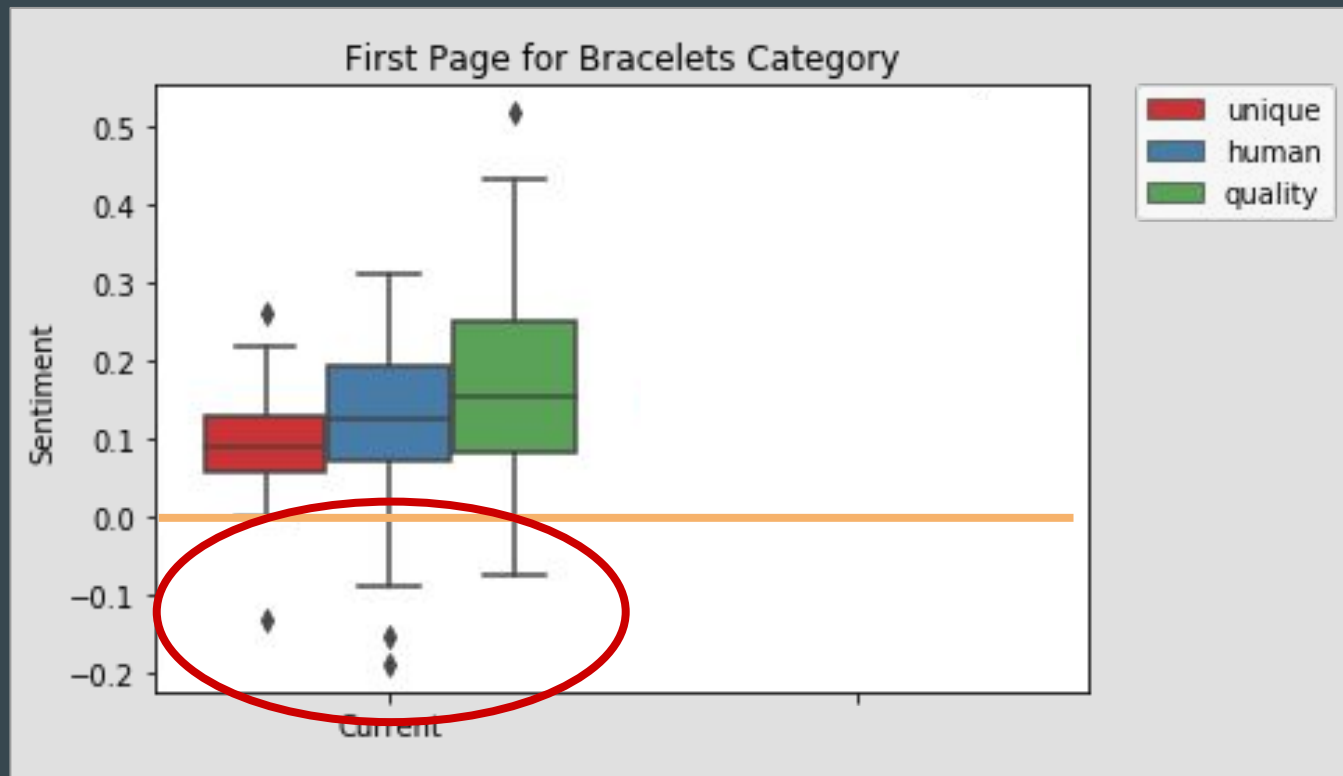
In Practice



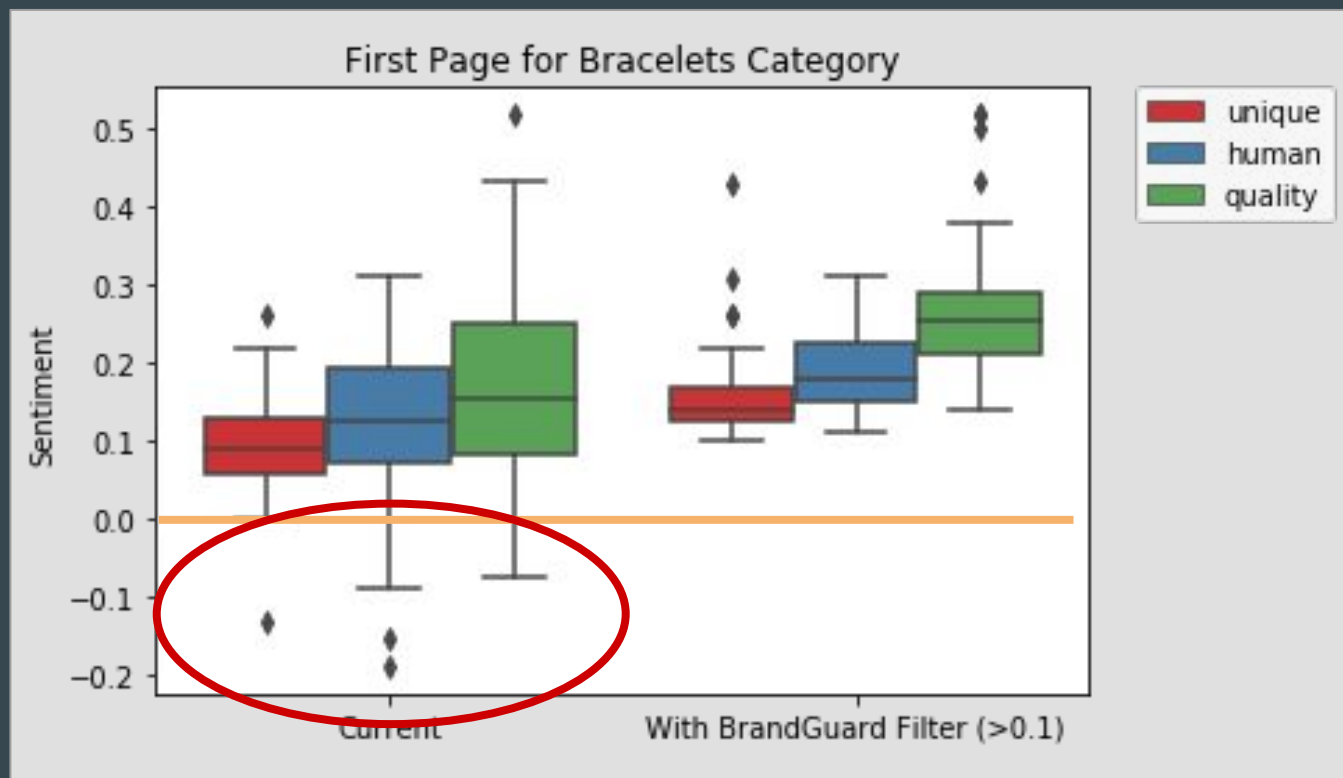
In Practice



In Practice



In Practice



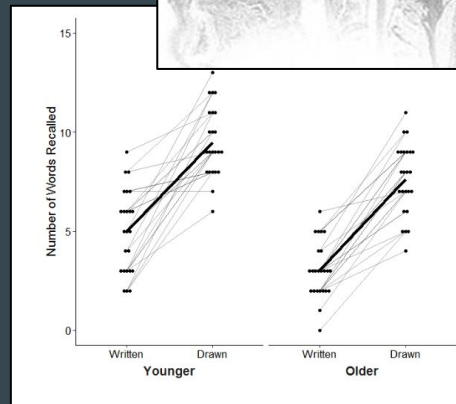
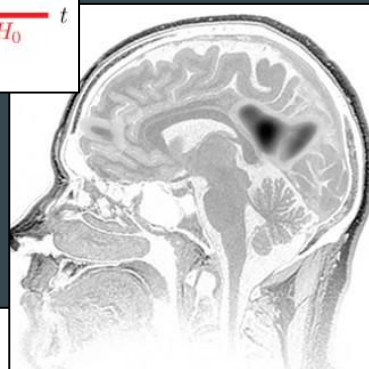
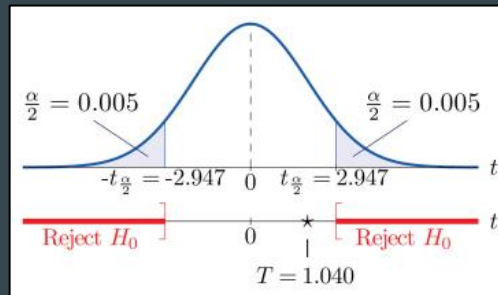
Michael Klein



PhD in Cognitive Science

D2L

Data Visualization Designer



Thank You

Core Values - Representative Words

- unique
- creative
- special
- inventive
- innovative
- handmade
- original
- handcrafted
- creativity
- crafted
- ...

- helpful
- communication
- response
- contact
- friendly
- attentive
- accommodating
- polite
- rude
- unresponsive
- ...

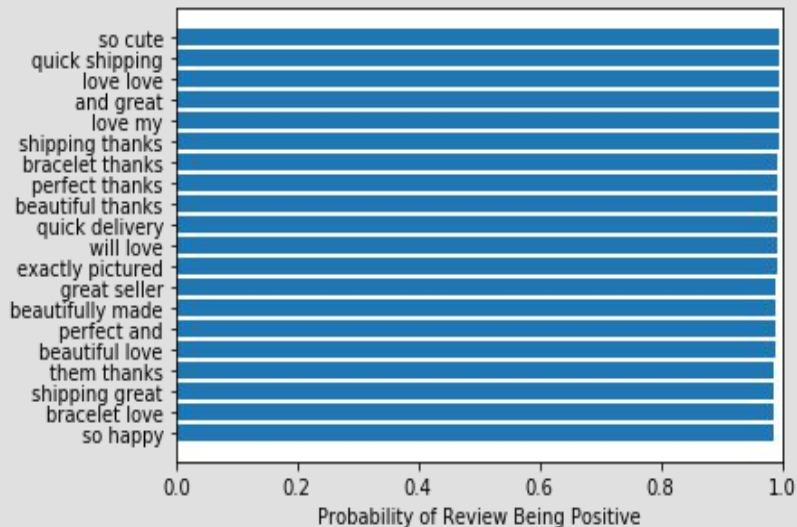
- quality
- condition
- described
- detailed
- craftsmanship
- craftsmanship
- workmanship
- material
- broke
- break
- ...

Preprocessing

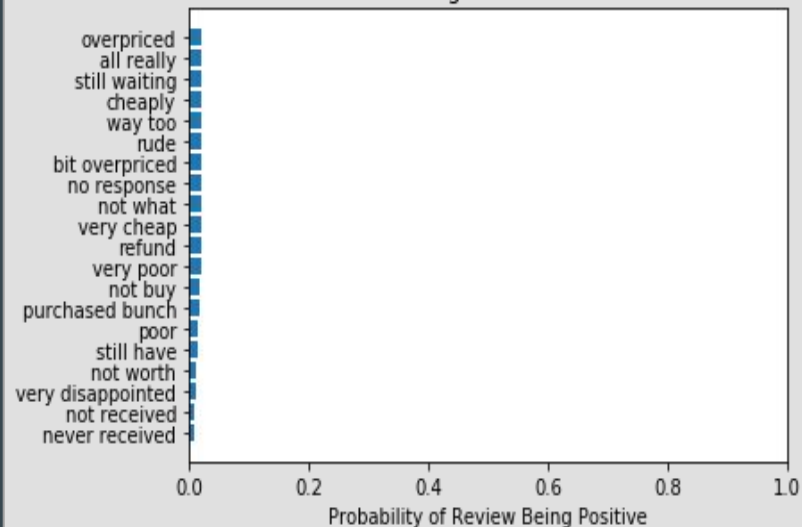
- Remove accents
- Lower case
- Expand contractions
- Tokenize (up to bigrams included for sentiment analysis)
- Remove non-alphanumeric characters
- Replace numbers with a number token
- Change a few common patterns (e.g. “A+” --> “amazing”)
- Lemmatize (using NLTK lemmatizer)
- Remove stop words (word2vec model only)
- TF-IDF vectorization (sentiment model only)
- Oversampling of negative reviews (sentiment model only)

Important Features

Most Positive Features



Most Negative Features



Future Directions

Topic Identification

- Possible bias towards identifying topic of positive reviews due to positive words in lists (e.g. “helpful”). Work on lists to remove this bias.
- Label larger set of data and train a classifier.
- Have multiple rather than 1 topic labeller - may have differing opinions

Sentiment Analysis

- Validate on shops from a different category than the model was trained on - would performance be worse?
- Train a model on multiple categories. Is it better to have one model per category, or one larger model?
- Use info other than words (punctuation, capitalization, etc)