

DRINKS and COCKTAILS RECOMMENDATION SYSTEM



Steven L Truong

Friday 05/27/2021

MOTIVATION





WORKFLOW



WORKFLOW



DATA

Scrape data and
API calling

WORKFLOW



DATA

Scrape data and
API calling



EDA

Visualize the data
and sentiment
analysis

WORKFLOW



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Scrape data and
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TOPIC MODELING

TF-IDF Vectorizer
and NMF(15)

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TOPIC MODELING

TF-IDF Vectorizer
and NMF(15)



REC-SYS

Take user's input and
recommend the most
relevant products

WORKFLOW



DATA

Scrape data and
API calling



EDA

Visualize the data
and sentiment
analysis



TOPIC MODELING

TF-IDF Vectorizer
and NMF(15)



REC-SYS

Take user's input and
recommend the most
relevant products



DEPLOYMENT

Build streamlit app
and deploy to
share.streamlit

DATA GATHERING

Scraped from multiple sources and API calling



Full Review

BUY IT NOW



Jacob Franklin 2015 Hoffman Lane, Cabernet Sauvignon, Napa Valley

Pair this wine with:



Category: Cabernet Sauvignon
Date Tasted: 7/28/2020
Country: USA
Alcohol: 15.2%

95 Points

Gold Medal
Exceptional

\$75

Cellar Selection

Black ruby color. Complex aromas of cinnamon potpourri, damson plum, black tea, carob, olive tapenade, and bay leaf with a round, vibrant, dryish medium-full body and a tingling, complex, long cumin, rose water, dark chocolate, and anise finish with moderate oak flavor. A bold, intensely complex Cabernet Sauvignon with huge aromatics of herbs and spices; exotic, conversation-worthy, and should be the centerpiece of the table.

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Tasting Info

	Style:	Fruity, Juicy & Smooth, Oaky, New World, Rich & Full & Spicy & Complex
	Aroma:	cinnamon potpourri, damson plum, black tea, carob, olive tapenade, and bay leaf
	Flavor:	cumin, rose water, dark chocolate, and anise
	Sweetness:	Dryish
	Enjoy:	Now-3 years on its own and with food
	Pairing:	Rack of Baby Lamb, Steak & Potatoes, Beef Stew
	Bottom Line:	A bold, intensely complex Cabernet Sauvignon with huge aromatics of herbs and spices; exotic, conversation-worthy, and should be the centerpiece of the table.

Cabernet Sauvignon



Serve in a Cabernet
Wine Glass

About
Cabernet Sauvignon

Cabernet Sauvignon is a variety that is the source of some of the world's most celebrated and longest-lived reds. Grown in many countries, it is most famous in Bordeaux, where it is the principal grape in red Bordeaux as well as in California – especially Napa Valley- where it is labeled by its varietal name.

Cabernet Sauvignon has aromas and flavors of black currant, cassis, black cherry and sometimes plum (in warmer regions or vintages). Quite rich on the palate, the variety is very tannic, giving its wines a bitter edge in their youth, but also providing the wines with great aging potential, with top flight examples drinking well for as long as four or five decades. Given their richness and flavor profile, wines made from Cabernet Sauvignon need to be paired

with rich red meats, such as steaks and roasts as well as game.

Besides France and California, other countries with warm growing regions also excel with Cabernet Sauvignon. These include the Maipo and Colchagua Valleys in Chile as well as the Bolgheri district, situated on the coast of Tuscany.



Exploratory data analysis

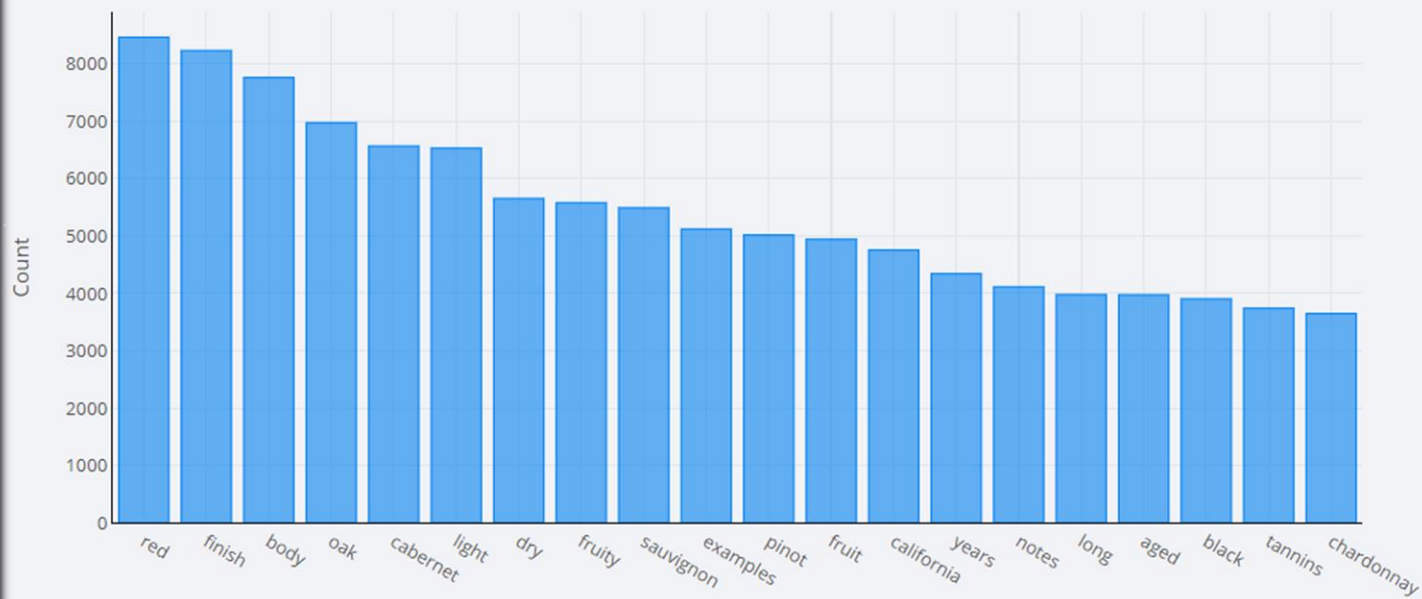
EDA and sentiment analysis

EDA and Sentiment Analysis

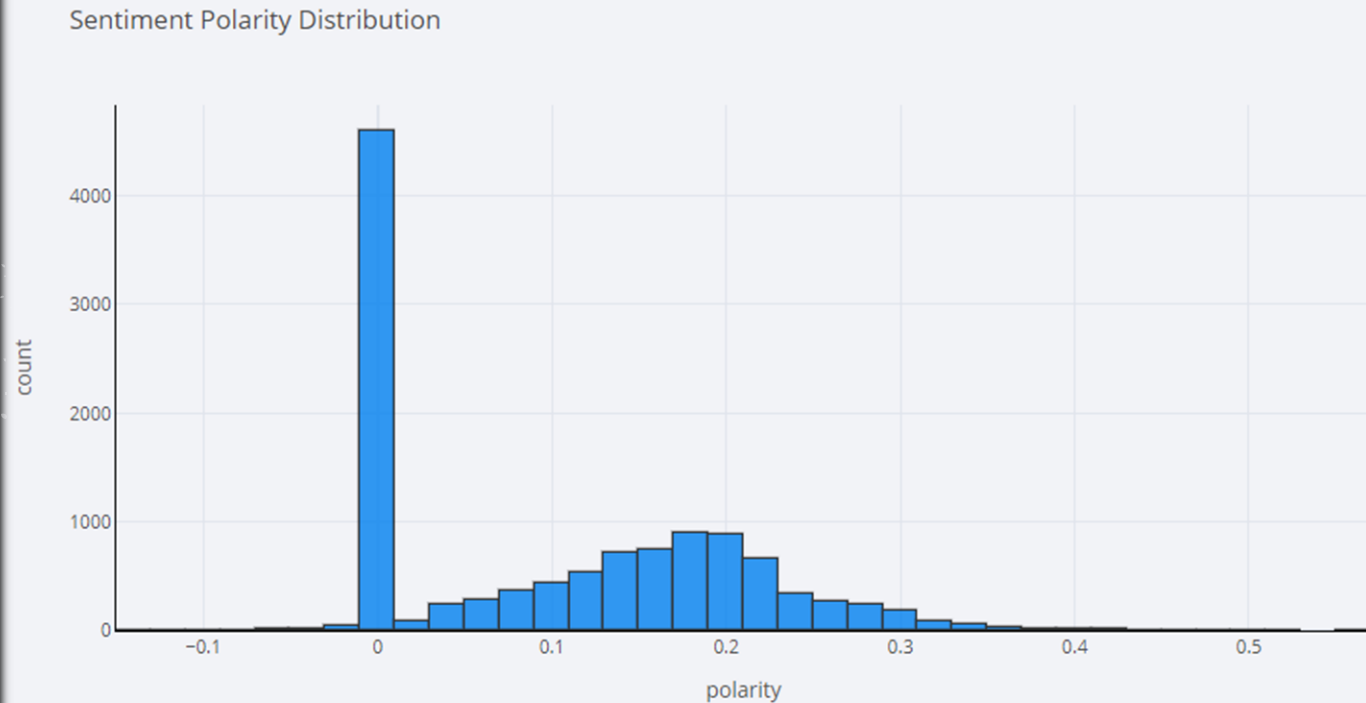


EDA and Sentiment Analysis

Top words in review after removing stop words



EDA and Sentiment Analysis



Topic Modeling

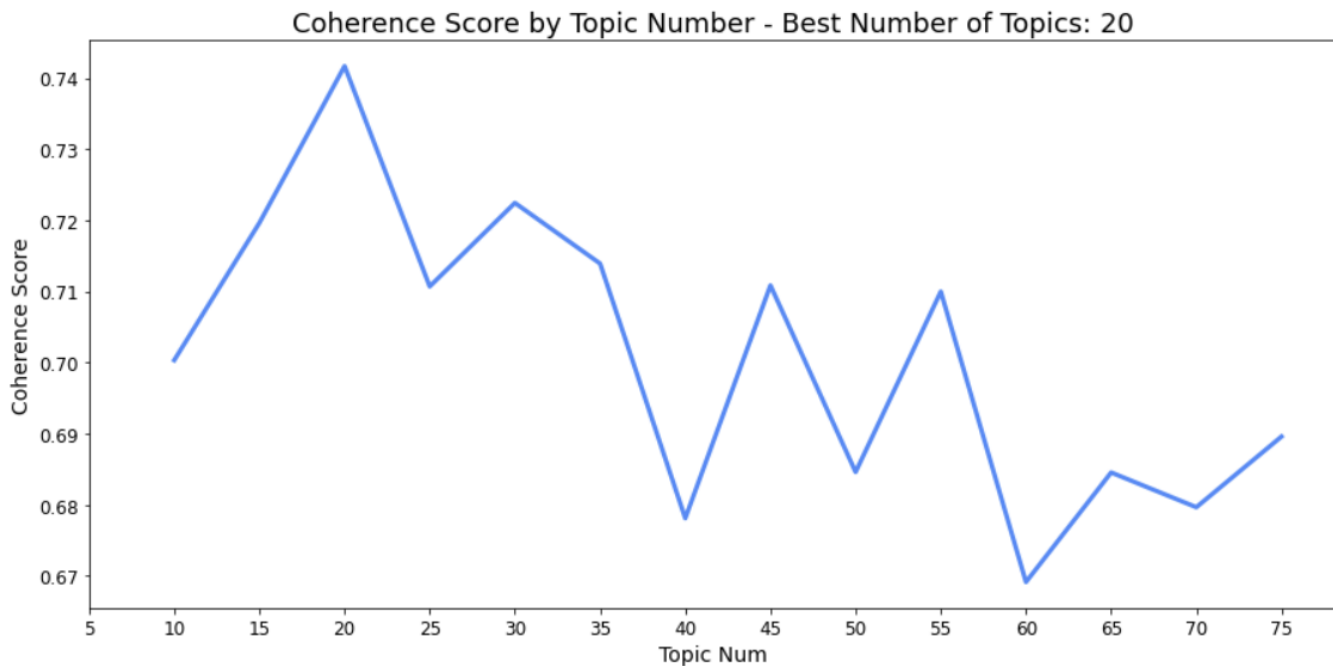
TF-IDF Vectorizer and NMF(15 components)



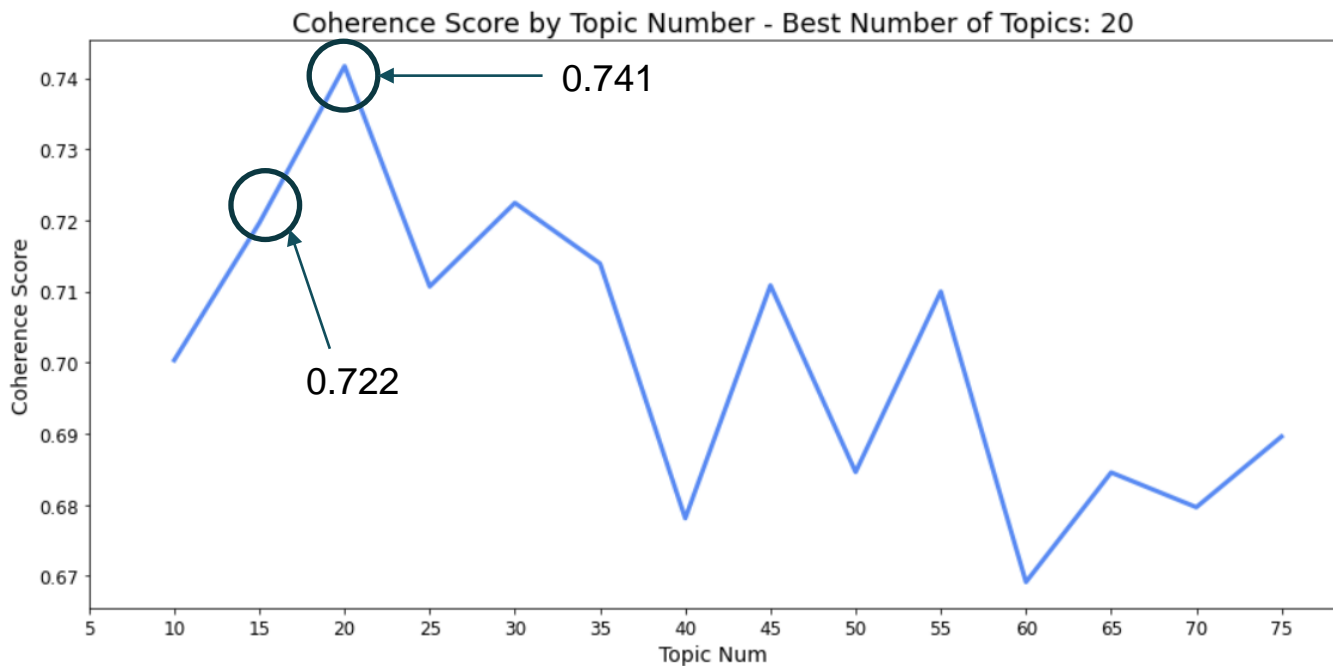
Coherence Scores



Coherence Scores



Coherence Scores



15 topics



15 topics

Based on type and flavor of alcohols



List of topics

1. Cheap, affordable, good value
2. Bittering hop IPA
3. White and spiced Rum
4. Oaky, fruity Red blend and Merlot
5. Dried sour cherries flavored Pinot Noir
6. Sweet and fruity cider
7. Dry and oaky Chardonnay
8. Non-smoky, sweet Rose
9. Fruity Sauvignon Blanc
10. Straight and flavored Vodka
11. Whiskey (Bourbon and Scotch)
12. Sweet, light, and corn beer
13. Smooth and dry tequila
14. Cocktail mixers (ready-to-drink cocktails)
15. Dry Gin



Cheap, affordable, good value



Whiskey, bourbon with rich flavor

The background features a dark purple gradient with large, overlapping, organic shapes in a slightly lighter shade of purple. A horizontal line of small, white, star-like specks runs across the upper right portion of the image, creating a cosmic or night sky effect.

Whiskey, bourbon with rich flavor

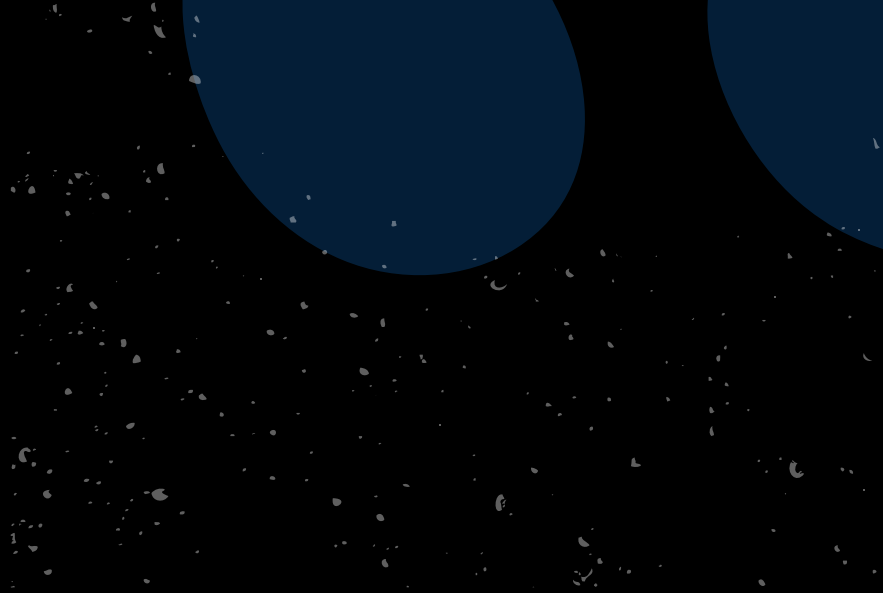
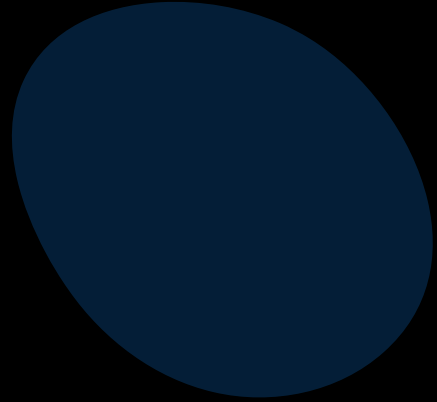


Recommendation System Application Deployment

Build content-based rec-sys and deploy it to
streamlit



How the system works



How the system works



USER INPUT

Text field for user input
(description, ingredients,
etc.)

How the system works



USER INPUT

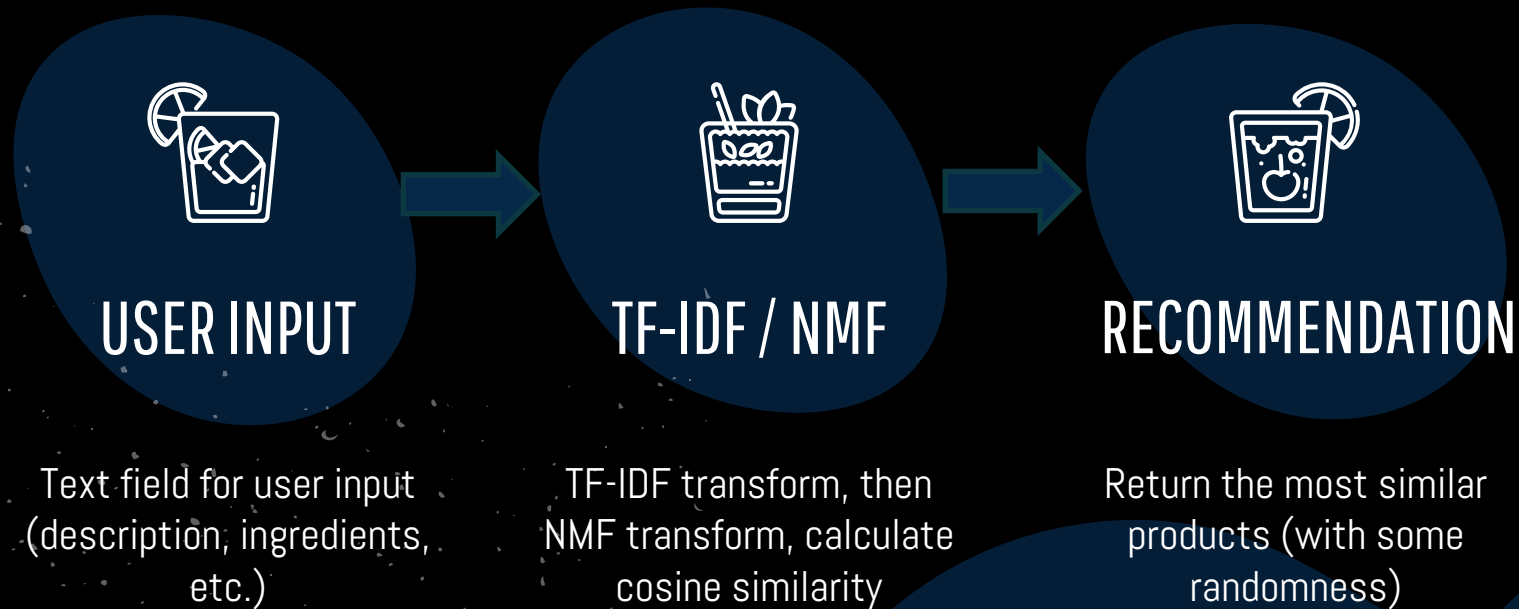
Text field for user input
(description, ingredients,
etc.)



TF-IDF / NMF

TF-IDF transform, then
NMF transform, calculate
cosine similarity

How the system works



DEMONSTRATION

How do we know that our system work? Let's see it in action!



FUTURE WORK

ALGORITHMS

- Try other clustering algorithms (K-means, DBSCAN)
- Optimize the recommendation system (use more num_topics/dimensions)

DATA

- Gather more data to recommend users.



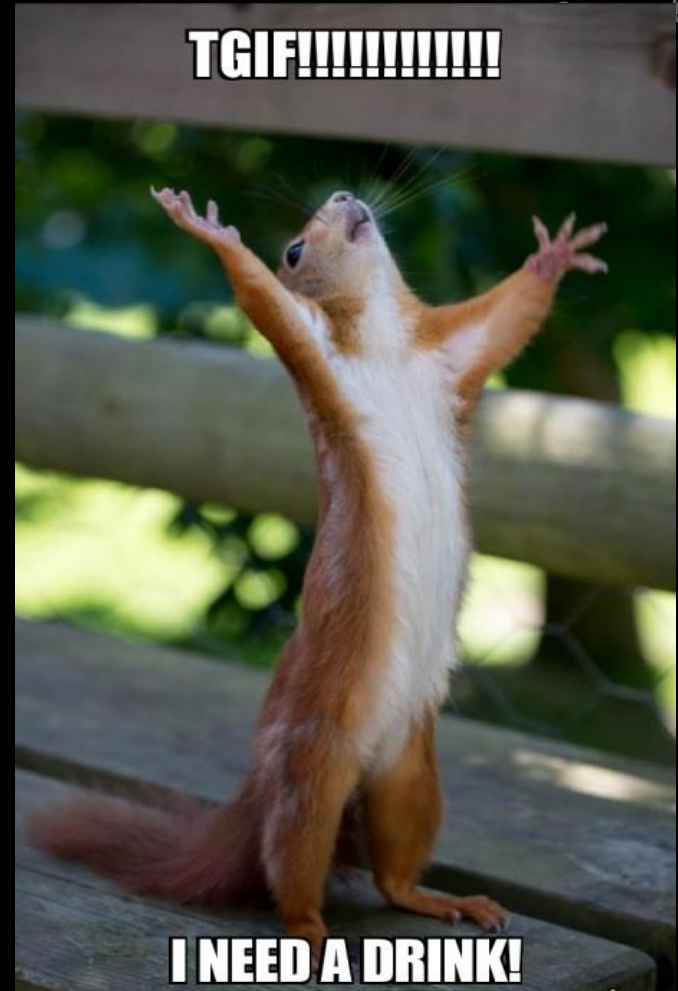
THANK YOU

Steven L Truong

Please reach out to me at

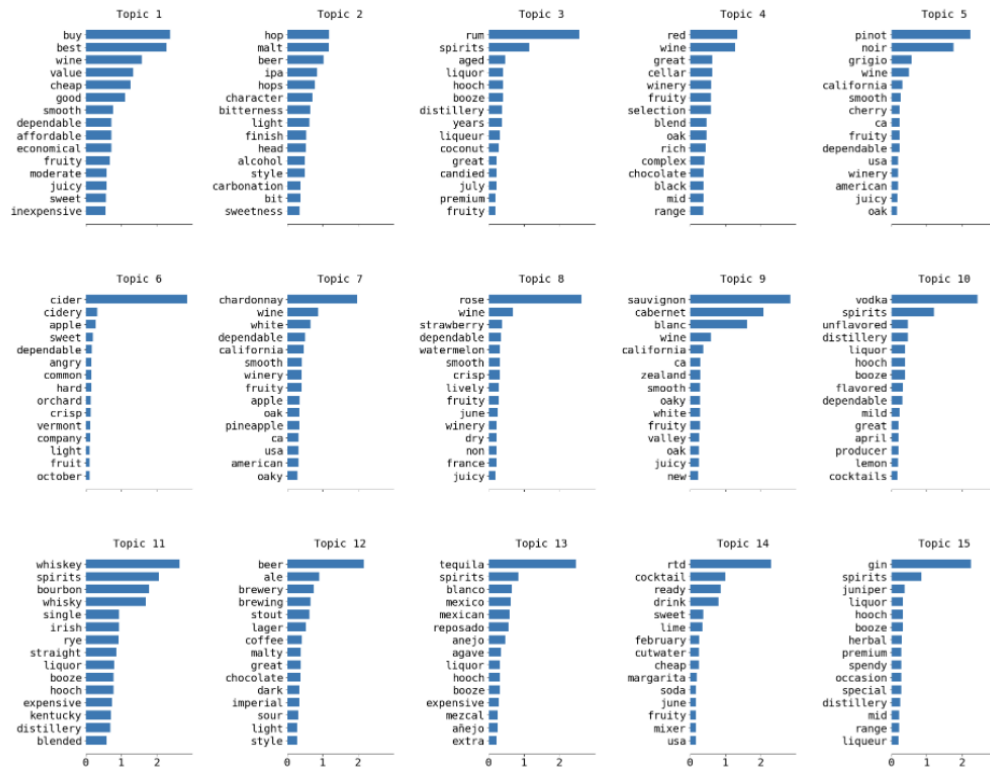


<https://www.linkedin.com/in/luongtruong77/>



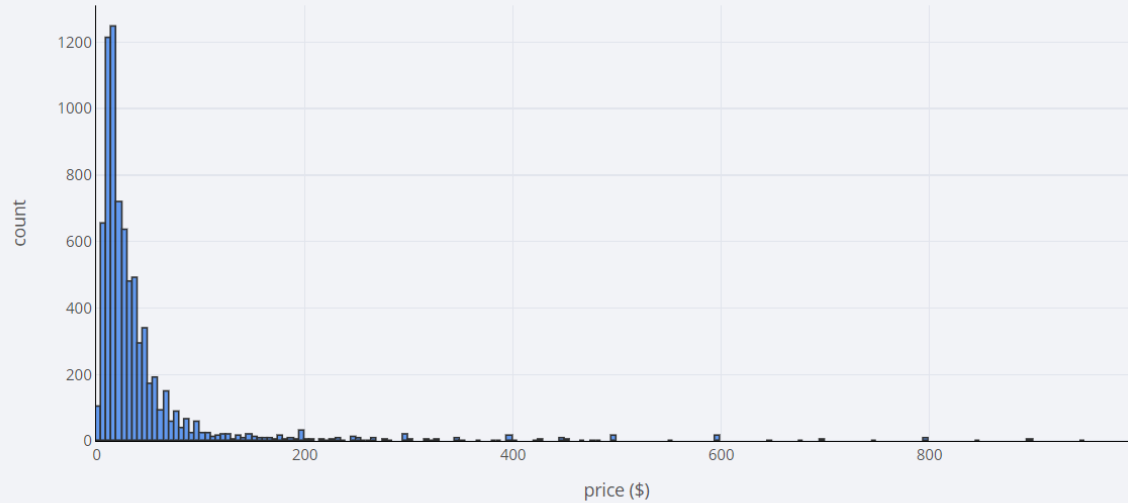
Appendix

NMF Topic Modeling on Descriptions



Appendix

Price Distribution

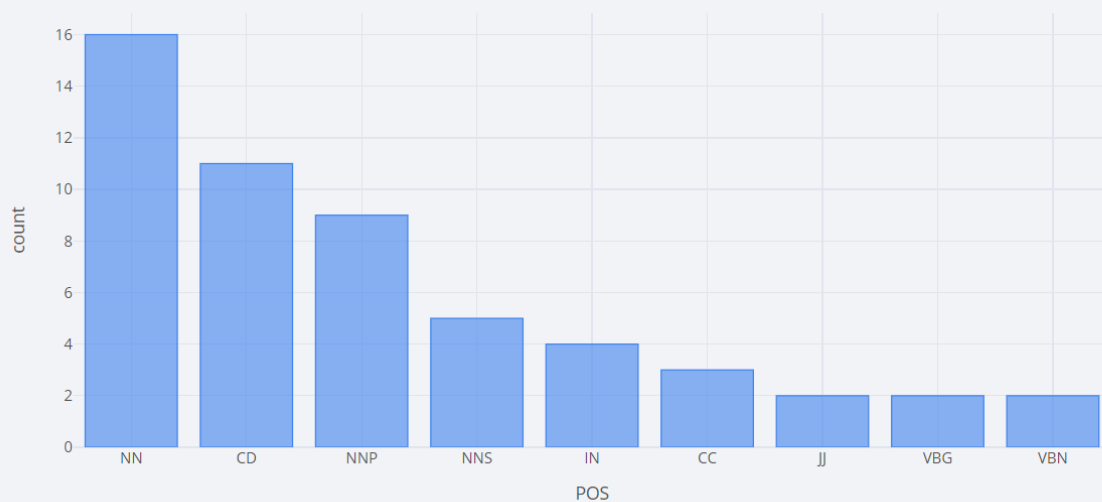


[Export to plot.ly »](#)



Appendix

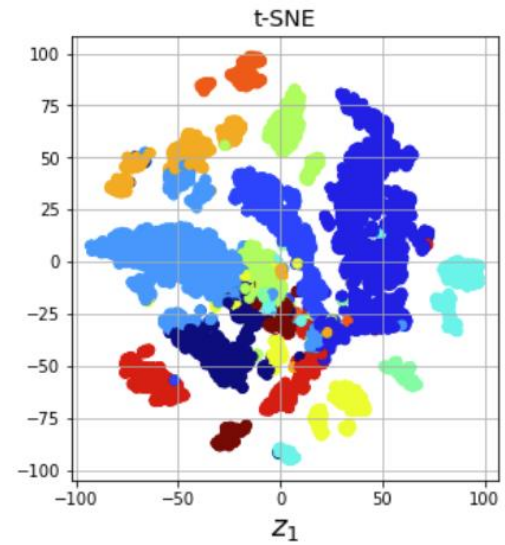
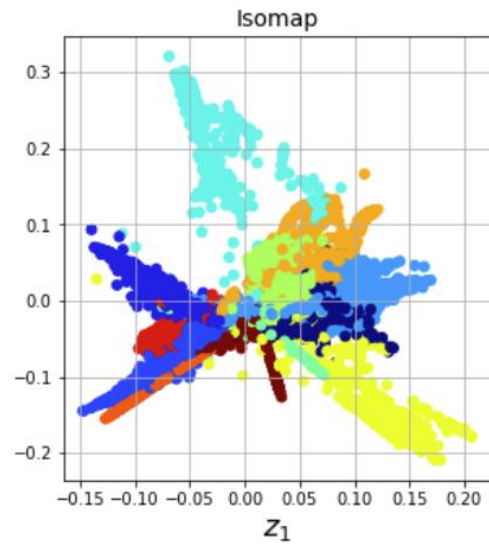
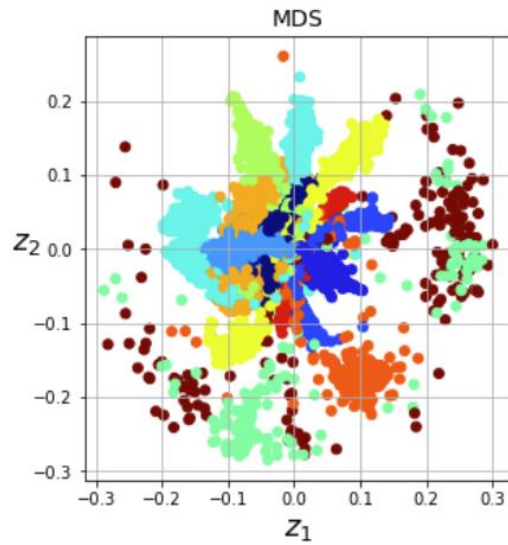
Part-of-speech tagging for review corpus



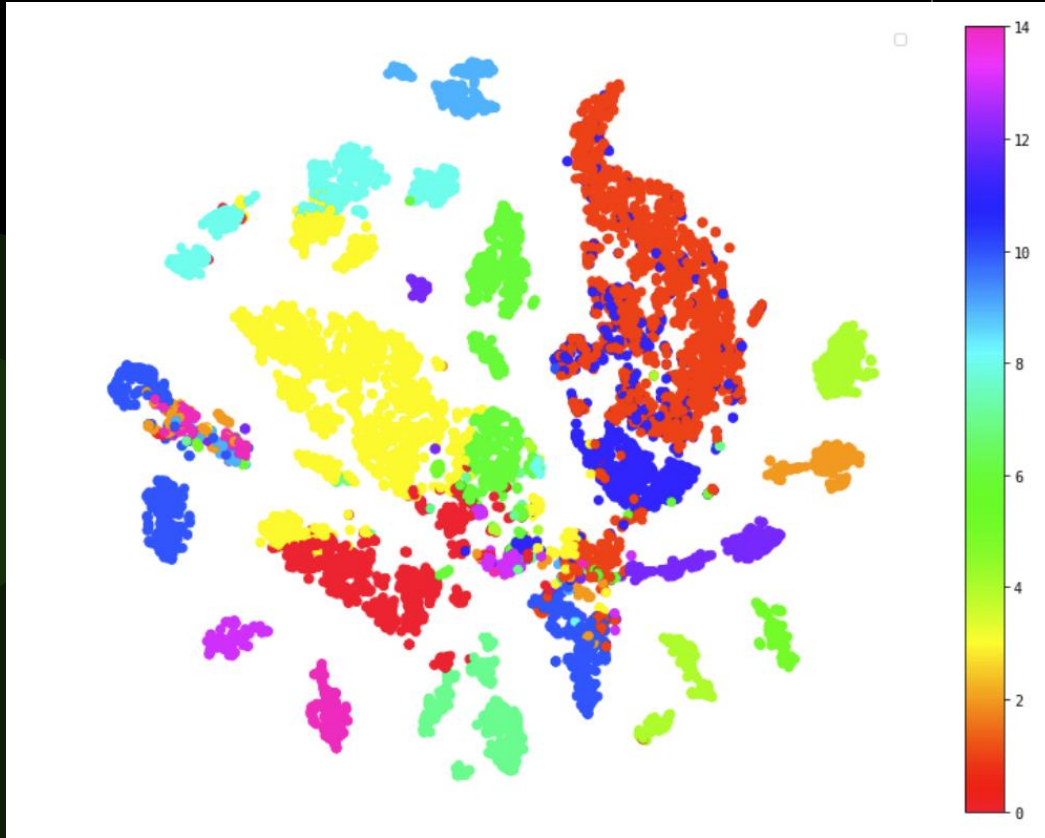
[Export to plot.ly »](#)



Appendix



Appendix



Appendix

cheap, affordable, and good value

juicy smooth good value
best buy wine
smooth fruity apple
buy best moscato
white fruity juicy
prosecco
sparkling
dependable
value sweet
fruity

bittering hop ipa

malt carbonation balance moderately
light moderate
overall
citrus pleasant
sweetness hop beer ipa
style american profile glass
fermentation quite
character dry dark
bitterness pine low notes
category double ipa head nice

white and spice rum

rum aged occasion spendy kingling
gold great liquor booze
smooth premium price
dry rum
price special medal
year
fruity spirits
booze hooch

red blend and merlot wine

blend caca california
red blend
wine winery
cellar selection
red black gold medal great
juicy smooth smooth fruity

red pinot noir wine

price affordable economical
wine noir red oak
fruity
ca california
california usa
moderate price
pinot noir
smooth juicy smooth red wine

sweet cider

producer dependable
silver medal
apple hard
cider
common dependable cidery
company
wards
fruity crisp light
gold medal april

dry white chardonnay

smooth ca california
california usa
chardonnay specialty
chardonnay white
oaky
wine
american price
juicy smooth

sweet rose

juicy smooth
moderate price dependable
smooth non price affordable
oak affordable economical
silver medal
wine non-oaky winery
fruity juicy oaky smooth strawberry

red cabernet sauvignon

moderate price ripe juicy smooth
oak wine white wine
california usa blanc ca
price affordable
ca california
sauvignon blanc
blanc white smooth
affordable economical

unflavored and flavored vodka

spirits unflavored
booze hooch dependable
distillery usa
fruity silver medal
mild vodka cream great
spirits producer spirits
unflavored vodka dry

whiskey and bourbon

whiskey ky kentucky usa
bourbon whiskey
spirits straight
straight bourbon
whiskey spirits
whiskey whiskey ky kentucky

fruity and lager beer

beer producer
great beer
brewing fruity gold medal
price american honey company
usa stout
coffee brewery
dry ale
chocolate dry
ale brewery

tequila

fruity premium price occasion spendy
blanco tequila
mexican spirits booze hooch
spirits great
price special
liquor booze
distillery mexico mexican

cocktails mixers

cocktail ready
fruity lime
smooth producer rtd
dependable complex
refreshing

dry gin

special occasion
white juniper
gin dry premium price
dependable occasion spendy
fruity spirits herbal
booze hooch liquor booze