We Suggest Coffee!

An unsupervised learning project on coffee shops in Austin, TX

Motivation

More reasons than ever to need a go-to coffee shop

- Working remote

- Meeting with friends

- Quiet place to unwind

- Delicious coffee!

Data: Your Reviews on Yelp!

01

Shop name

Label for each document

02

Text review

Bag-of-words for model to learn on

03

Star rating

Metadata for recommendation
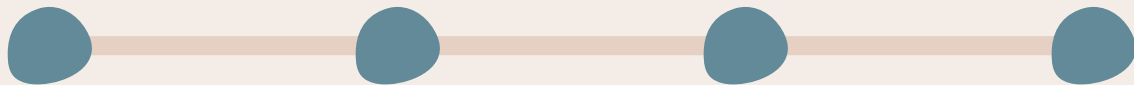
Recommendation Workflow

Tokenization

Topic Modeling

Vectorization

-TFIDF

Recommender System

-Content-Based

Topics of Interest

<u>Food</u> - Breakfast taco, egg, morning, sandwich

<u>Ambiance</u> - nice, work, seating, music, spot

<u>Coffee</u> - latte, milk, vanilla, iced, drink

<u>Treats</u> - cookie, chocolate, sweet, cream puff

<u>Service</u> - Friendly staff, love place, super

So where should you go?

That depends on what you want in a coffee shop!

Recommender in Action

```
keyword = ['friendly']
get_coffee_recs(keyword)

[('Irie Bean Coffee Bar ', 4.3),
 ('Live Oak Market ', 4.51),
 ('Apanas Coffee & Beer ', 4.58)]
```

```
keyword = ['latte']
get_coffee_recs(keyword)

[('Summermoon Coffee Bar ', 4.31),
 ('Brian's Brew ', 4.84),
 ('Lola Savannah Coffee Downtown ', 5.0)]
```

```
keyword = ['work']
get_coffee_recs(keyword)

[('Flightpath Coffeehouse ', 4.23),
 ('Friends & Neighbors ', 4.55),
 ('Radio Coffee & Beer ', 4.0)]
```

Irie Bean Coffee Bar

Summer Moon Coffee | Oak Roasted Coffee Roasters + Shops

The Flightpath Coffeehouse | Austin, TX

Conclusions

- **Yelp reviews can provide great insight to both humans and machine learning model!**
- **Similar modeling could be applied to many different fields**
- **Coffee shops in different cities would likely produce different topics**

Future Work

1. Create collaborative based model and compare

2. Hybrid modeling

3. Recs for other cities

Thank you!

Appendix

	topic_0	topic_1	topic_2	topic_3	topic_4	topic_5	topic_6	topic_7	review	rating	name
0	0.003408	0.000000	0.008788	0.097035	0.052656	0.006470	0.000000	0.000000	check in love love loved the atmosphe...	5	The Factory - Cafe With a Soul
1	0.034141	0.000535	0.000000	0.001177	0.032197	0.016309	0.018436	0.000000	listed in date night austin ambiance ...	4	The Factory - Cafe With a Soul
2	0.027451	0.000000	0.010269	0.000000	0.000166	0.077941	0.026688	0.050174	check in listed in brunch spots i lov...	4	The Factory - Cafe With a Soul
3	0.050254	0.000282	0.000000	0.042862	0.000000	0.011425	0.000000	0.002755	very cool decor good drinks nice seati...	2	The Factory - Cafe With a Soul
4	0.022367	0.003361	0.021874	0.000000	0.017531	0.046071	0.012401	0.000000	check in they are located within the ...	4	The Factory - Cafe With a Soul

name	topic_0	topic_1	topic_2	topic_3	topic_4	topic_5	topic_6	topic_7	rating
Alta's Cafe	0.028647	0.011104	0.018421	0.007914	0.017422	0.007884	0.004334	0.007049	3.930000
Anderson's Coffee Company	0.006288	0.000455	0.035010	0.001989	0.026647	0.017241	0.004508	0.010605	4.620000
Apanas Coffee & Beer	0.027755	0.002809	0.017791	0.016638	0.034814	0.005752	0.003983	0.003641	4.580882
Arturo's Underground Cafe	0.012415	0.035405	0.031274	0.003378	0.020472	0.009828	0.006452	0.002625	4.300000
Bennu Coffee	0.031105	0.002171	0.021774	0.013902	0.021223	0.008568	0.011415	0.003386	4.130000
...	...	...	...	...	...	...	...	...	...
Thunderbird Coffee	0.035359	0.008218	0.021365	0.025463	0.016057	0.006235	0.004854	0.004642	3.970000
Trianon Coffee	0.021453	0.014480	0.022739	0.014326	0.033855	0.007879	0.004513	0.006964	4.020408
Tuscany At 360	0.031553	0.017411	0.019970	0.008707	0.010991	0.010074	0.000915	0.003101	3.818182
Venezia Italian Gelato	0.008464	0.001657	0.018749	0.002764	0.024429	0.001596	0.048571	0.001011	4.810000
Vintage Heart Coffee	0.030529	0.000685	0.013212	0.043365	0.020652	0.009508	0.006747	0.027442	4.170000

	name	review	rating
0	The Factory - Cafe With a Soul	11/25/2016 1 check-in Love love loved the atm...	5.0 star rating
1	The Factory - Cafe With a Soul	12/2/2016 Listed in Date Night: Austin, Ambia...	4.0 star rating
2	The Factory - Cafe With a Soul	11/30/2016 1 check-in Listed in Brunch Spots ...	4.0 star rating
3	The Factory - Cafe With a Soul	11/25/2016 Very cool decor! Good drinks Nice ...	2.0 star rating
4	The Factory - Cafe With a Soul	12/3/2016 1 check-in They are located within ...	4.0 star rating

Topic 0
work, shop, lot, nice, parking, table, seating, seat, music, spot

Topic 1
taco, breakfast, breakfast taco, egg, morning, sandwich, food, cheese, bacon, deli

Topic 2
time, order, come, drink, ve, service, wait, don, know, try

Topic 3
latte, milk, moon, vanilla, chai, sweet, iced, vanilla latte, drink, ice

Topic 4
love, friendly, staff, super, love place, atmosphere, friendly staff, awesome, staff friendly, delicious

Topic 5
tea, chicken, boba, milk tea, chai, waffle, green, chai tea, milk, toast

Topic 6
cream, flavor, puff, ice, ice cream, chocolate, cream puff, cookie, try, sweet

Topic 7
brew, cold, cold brew, strong, ice, iced, tap, day, stop, cup

Thanks