



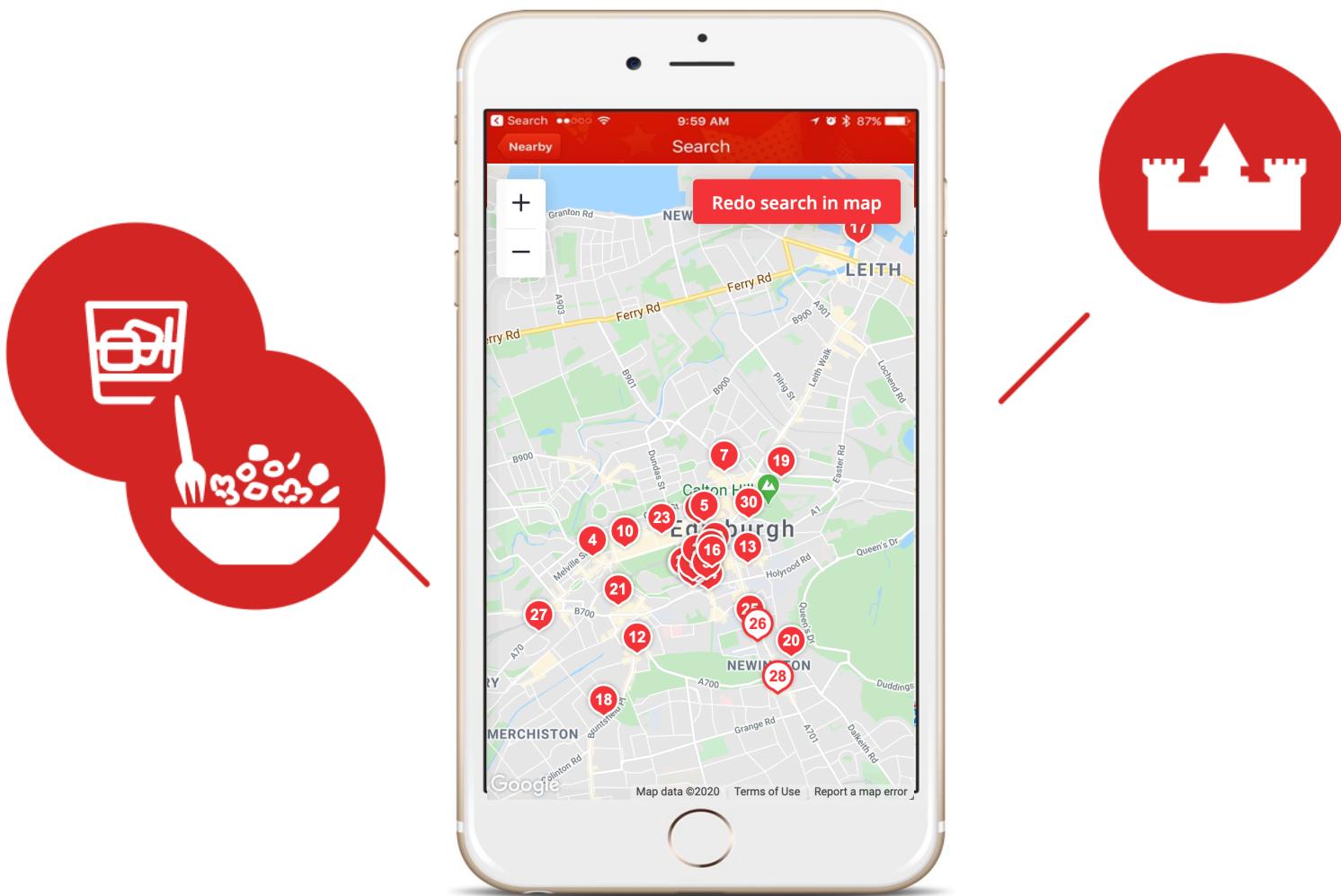
Bar Recommender

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Metis Project 4

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Imagine you're visiting Edinburgh, Scotland...



EdinBuzzed: A Bar Guide Workflow



Yelp dataset

Over 5 million reviews



Bars

Subset with ratings 3
and above



NLP

Topics people care
about



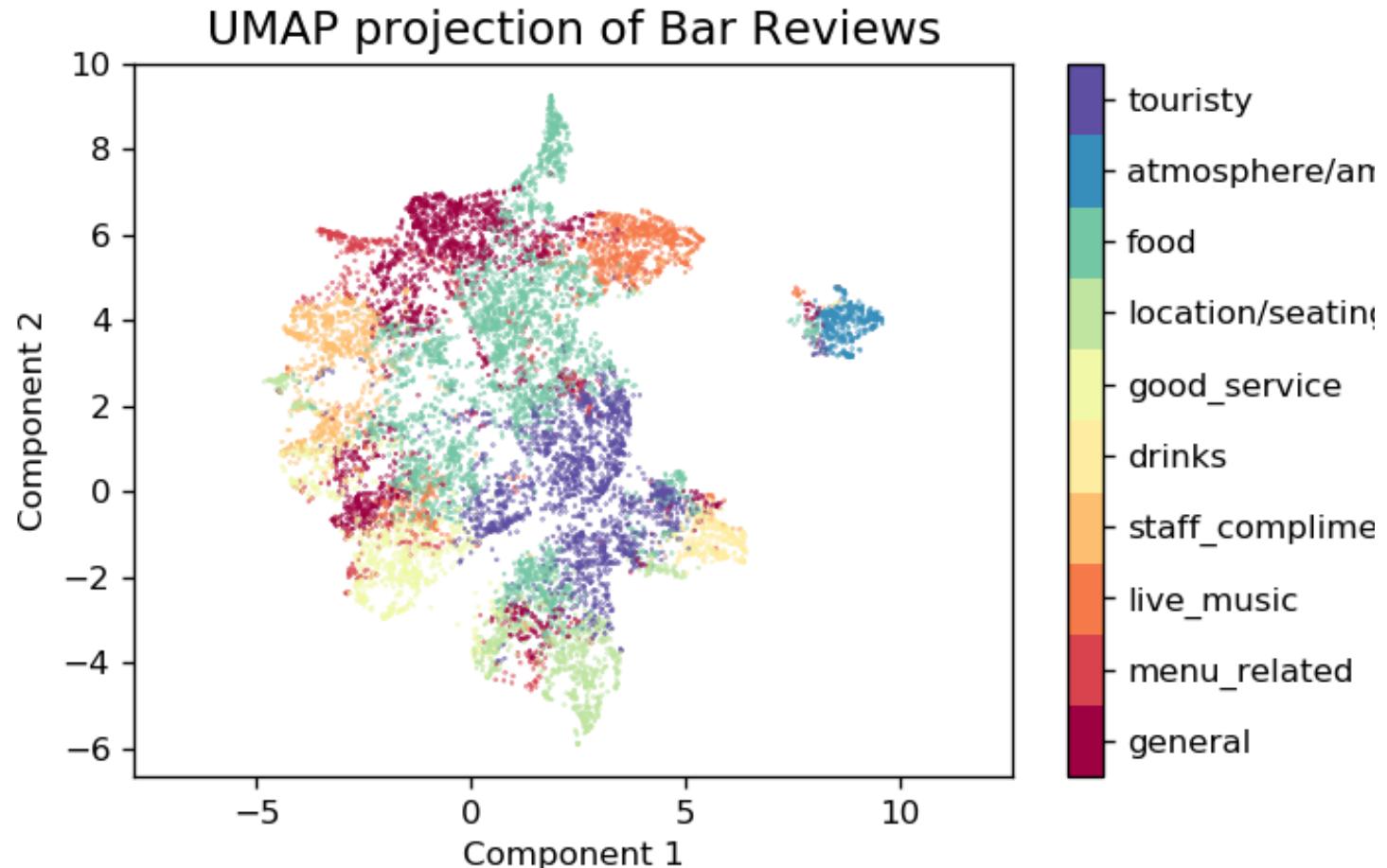
Recommendation

Flask

Dimensionality Reduction

Term frequency-inverse document frequency (TF-IDF)

Nonnegative Matrix Factorization(NMF)



UMAP graph shows clustering of documents associated with same topics

Overlap indicates commonality in words in documents

Top 6 Topics in Reviews

Ambience

atmosphere, nice,
good, really,
great, place,
relaxed, little,
lovely, love

Quality of staff

friendly, staff,
helpful, great,
excellent, lovely,
welcoming, place,
best, knowledgeable

Service

service,
excellent, great,
good, quick,
location, slow,
super, fast, busy

Food

fish, chip, pie,
steak, best, ale,
haggis, eat, meal,
portion

Location/seating

area, busy, street,
drink, outside,
seating, worth, day,
range, priced

Drinks

selection, beer, great,
good, tap, whisky,
real, craft, garden, ale

A dark laptop screen displaying a web browser window. The window has a dark header bar with three colored dots (red, yellow, green) on the left, a tab labeled "My Webpage" in the center, and close (+) and minimize (x) buttons on the right. Below the header is a toolbar with back, forward, and refresh buttons. The URL bar shows the address "127.0.0.1:5000/recommender?interest=cheap+sticky". The main content area of the browser contains a form with the question "What are you looking for?: " followed by a "Submit" button. Below this, the text "You might like these bars:" is displayed, followed by a list of five bar names: "The Voodoo Rooms", "Iglu", "Kanpai", "Lebowskis", and "Jake's Place".

What are you looking for?:

You might like these bars:

- "The Voodoo Rooms"
- "Iglu"
- "Kanpai"
- "Lebowskis"
- "Jake's Place"

Get Recommendations!

Future Work



Create algorithm to recommend based off previous searches



Incorporate more data to create a robust model

Appendix

DRAUGHT BEER		(30Z ALL 7 DOLLARS)
A	PINT PURSUITS LAGER	L BURDOCK APA
B	GODLOT FARMHOUSE	M COLLINGWOOD ESB
C	LEFTFIELD CRAN SAISON	N ROLLING ROCK
D	BLACKBELLOWS WHITE	O COLLINGWOOD VINTAGE
E	DOMINION EARL GREY	P BURDOCK VERMONT BLOND
F	BURDOCK TE SOUR	Q SHINY RHOT NOIR CIDER 30Z \$10
G	LEFTFIELD VERMONT IPA	R NICKELBROOK LIME CERES
H	BRICKWORKS CIDER	S FLORA LOESTAR
I	NICKELBROOK MAPLE PORTER	T ALEXANDER KEITHS
J	BLACKBELLOWS MEMPHIS	U COBBLESTONE STOUT
K	COLLINGWOOD WARP 9	V WAMS GINGER KOMBUCHA

COFFEE	
ESPRESSO/AMERICANO	3.50
MACCHIATO/CORTADO	3.62
CAPPUCCINO/FLAT WHITE	3.95
LATTE	4.80
ESPRESSO	2.60/3.01/3.30
ICHAUWACHA LATTE	4.43
ORGANIC TEA	3.33
HOT CHOCOLATE/SPICED	4.02/
LONDON FOG	3.62
APPLE CIDER/HOT SPICED	4.43
HALF PRICE WINE BOTTLES TUESDAY	

Topics from CountVectorizer with LSA

```
In [400]: #Showing topic 5 from each topic  
display_topics(lsa, cv.get_feature_names(), 5)
```

Topic 0

staff friendly, great place, go back, really good, royal mile

Topic 1

go back, would go, would go back, definitely go, definitely go back

Topic 2

staff friendly, friendly helpful, staff friendly helpful, staff friendly attentive, friendly attentive

Topic 3

royal mile, fish chip, live music, really good, worth visit

Topic 4

royal mile, fish chip, go back, great place, staff friendly

Topic 5

friendly staff, worth visit, good selection, well worth, live music

Topic 6

fish chip, pretty good, toffee pudding, sticky toffee, sticky toffee pudding

Topic 7

good selection, really good, worth visit, well worth, go back

Topic 8

live music, good selection, place go, first time, reasonably priced

Topic 9

friendly staff, really good, good selection, go back, royal mile

Topics from TF-IDF with LSA

```
In [402]: display_topics(lda, tfidf.get_feature_names(), 5)
```

```
Topic 0
good, great, place, staff, friendly

Topic 1
service, delicious, friendly, excellent, fish

Topic 2
friendly, great, atmosphere, staff, selection

Topic 3
service, beer, fish, royal, mile

Topic 4
selection, beer, mile, royal, tap

Topic 5
service, nice, good, busy, atmosphere

Topic 6
friendly, royal, mile, fish, chip

Topic 7
nice, chip, fish, music, live

Topic 8
atmosphere, worth, nice, lovely, visit

Topic 9
mile, royal, nice, recommend, place
```