
Recommendation System for Airbnb listings

Ioannis Petromichelakis

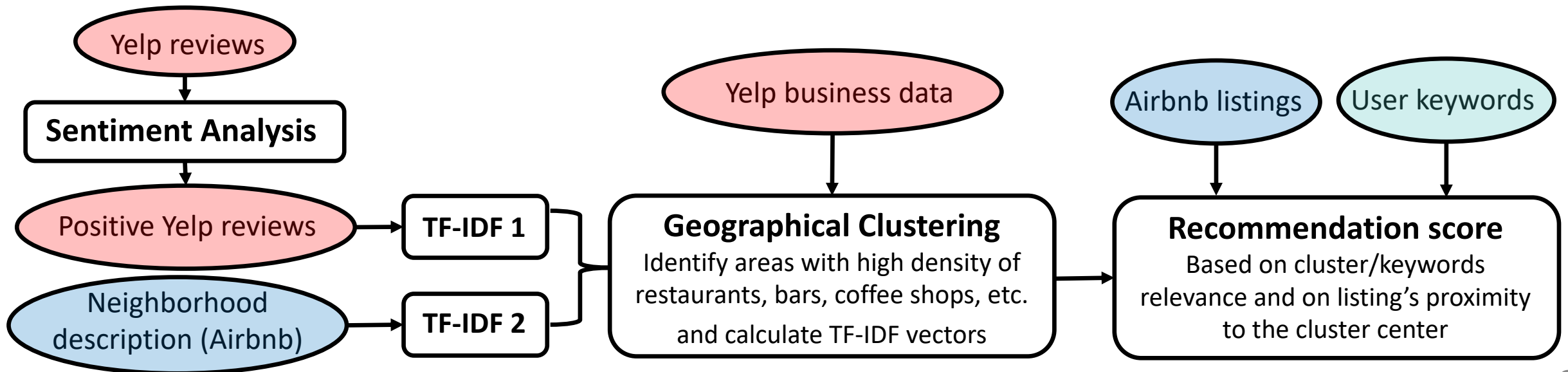
Outline

Assumptions and Objective

- The “**style**” of the neighborhood of settlement should much **traveler’s preferences**
- **Restaurants, bars, coffee shops, etc.** are a proxy for the “style” and “vibe”
- Reach those places in a **few steps** and feel **comfortable** spending time there
- Identify neighborhoods that much traveler’s preferences
- Choose Airbnb listings that ideally located within these neighborhoods

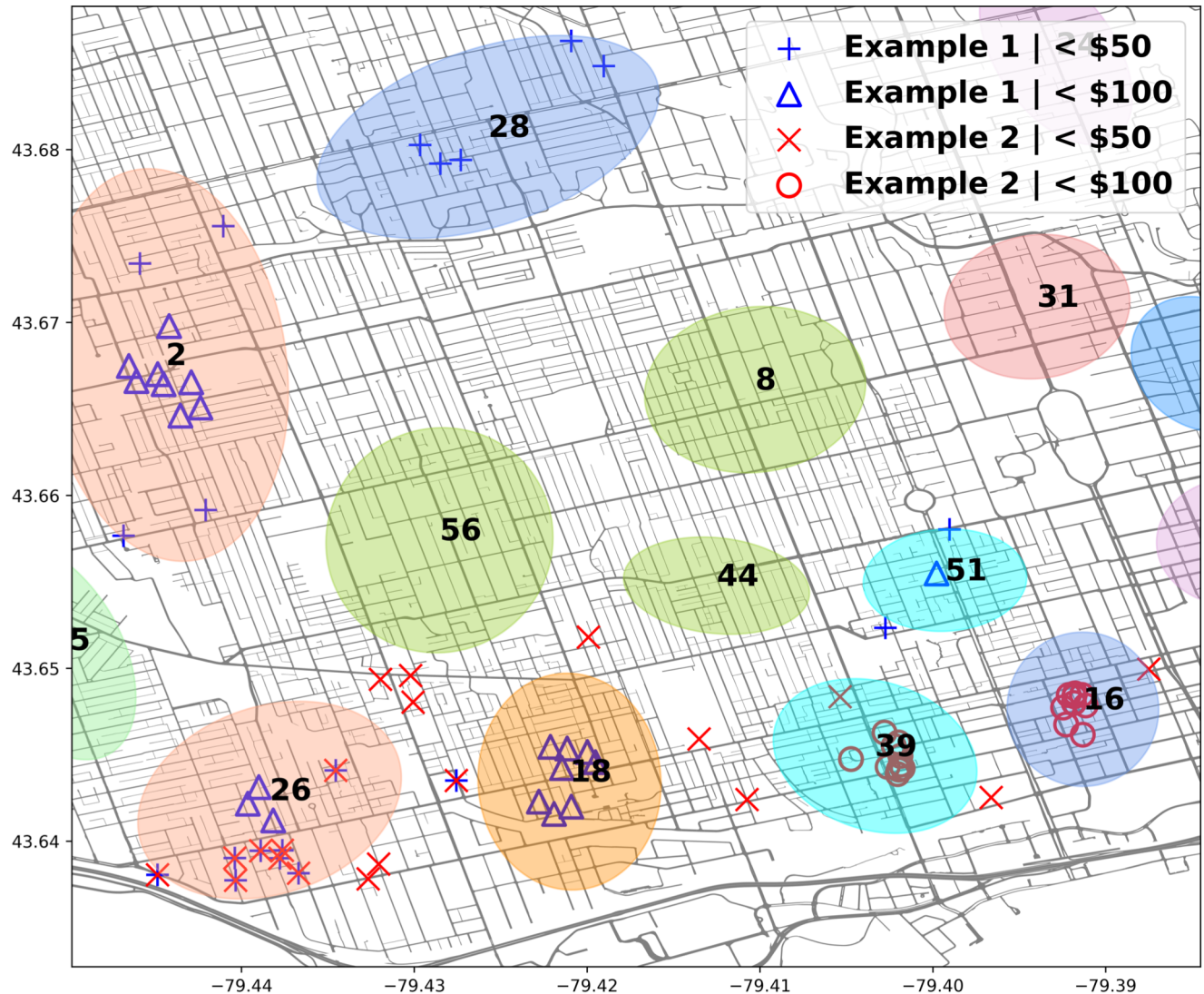
Data:

- Yelp Challenge Dataset (5.5GB) from yelp.com
- Airbnb Listings in Toronto and Montreal (200MB) from insideairbnb.com



Results - Toronto

Example 1: ['hipster', 'hippy', 'art'] Example 2: ['clubs', 'nightlife']

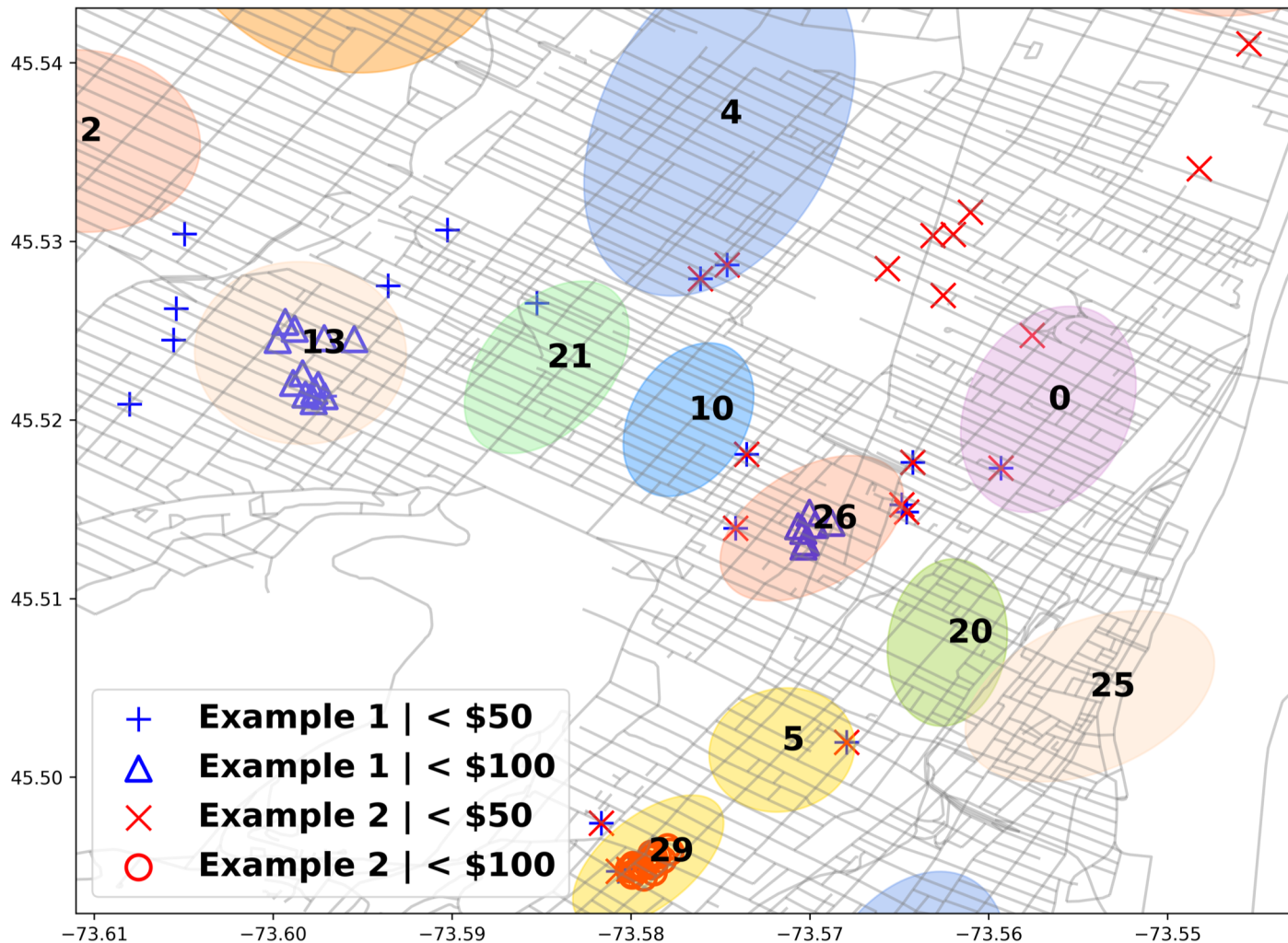


Cluster	Scr 1	Scr 2	# listings	Avg. Price	Neighborhoods	%
2	6.6	2.3	279	\$101.33	Dovercourt-Junction	69
					Corso Italia-Davenport	21
16	2.8	5.0	794	\$204.44	Waterfront Communities	94
18	6.8	3.8	487	\$177.35	Little Portugal	37
					Niagara	33
					Trinity-Bellwoods	19
					Roncesvalles	40
26	6.1	4.2	319	\$125.96	South Parkdale	38
					Little Portugal	18
					Wychwood	53
28	4.1	1.6	125	\$119.88	Humewood-Cedarvale	22
					Waterfront Communities	68
39	3.5	5.1	769	\$199.43	Niagara	20
					Trinity-Bellwoods	53
44	3.1	3.7	174	\$141.52	Palmerston-Little Italy	38
					Kensington-Chinatown	98
51	6.4	1.9	250	\$122.03		

Results - Montreal

Example 1: ['hipster', 'hippy', 'art']

Example 2: ['clubs', 'nightlife']



Cluster	Scr 1	Scr 2	# listings	Avg. Price	Neighborhoods	%
0	4.5	<u>7.4</u>	787	\$109.20	Ville-Marie	100
5	5.8	<u>8.8</u>	325	\$186.20	Ville-Marie	76
					Le Plateau	24
13	<u>10.3</u>	5.3	603	\$122.17	Le Plateau	77
					Outremont	14
20	<u>8.0</u>	6.4	453	\$158.07	Ville-Marie	100
21	<u>6.6</u>	5.5	691	\$115.44	Le Plateau	99
25	5.3	<u>7.0</u>	420	\$187.64	Ville-Marie	98
26	<u>8.3</u>	<u>8.2</u>	823	\$159.81	Le Plateau	70
					Ville-Marie	30
29	<u>6.4</u>	<u>9.3</u>	728	\$125.02	Ville-Marie	99

Future directions

- Improve the Recommendation System
 - More sophisticated **word embedding**
 - **Capture trends** via temporal information
- Extend the System by utilizing more data
 - Include **many cities** by scrapping Yelp, Airbnb and possibly Instagram
 - **Identify activities** that are associated to specific neighborhoods
- Deploy a **Destination Recommendation** component

Thank you!

Outline

