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# Recommendation System for Airbnb listings

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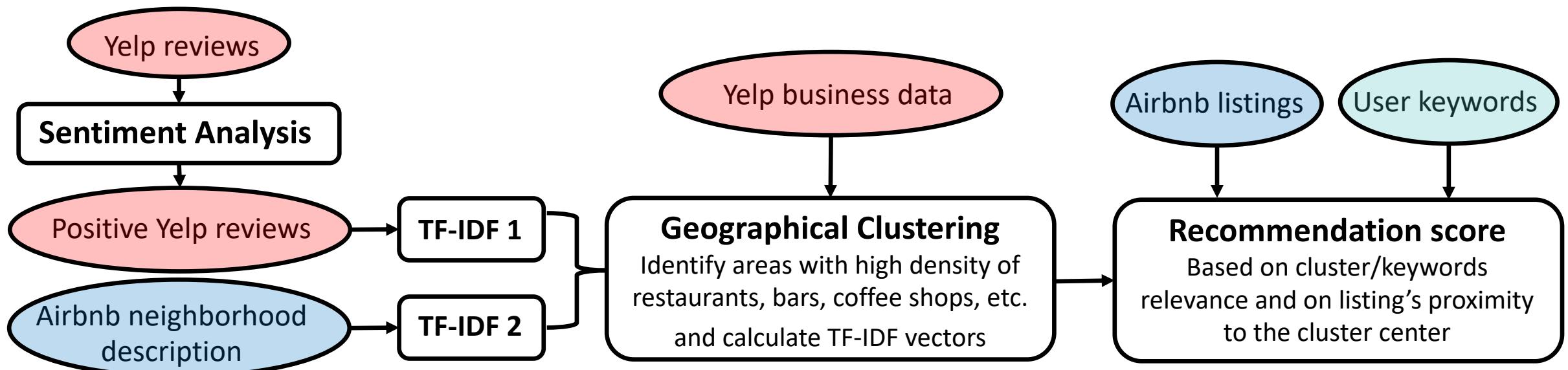
# Outline

## 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

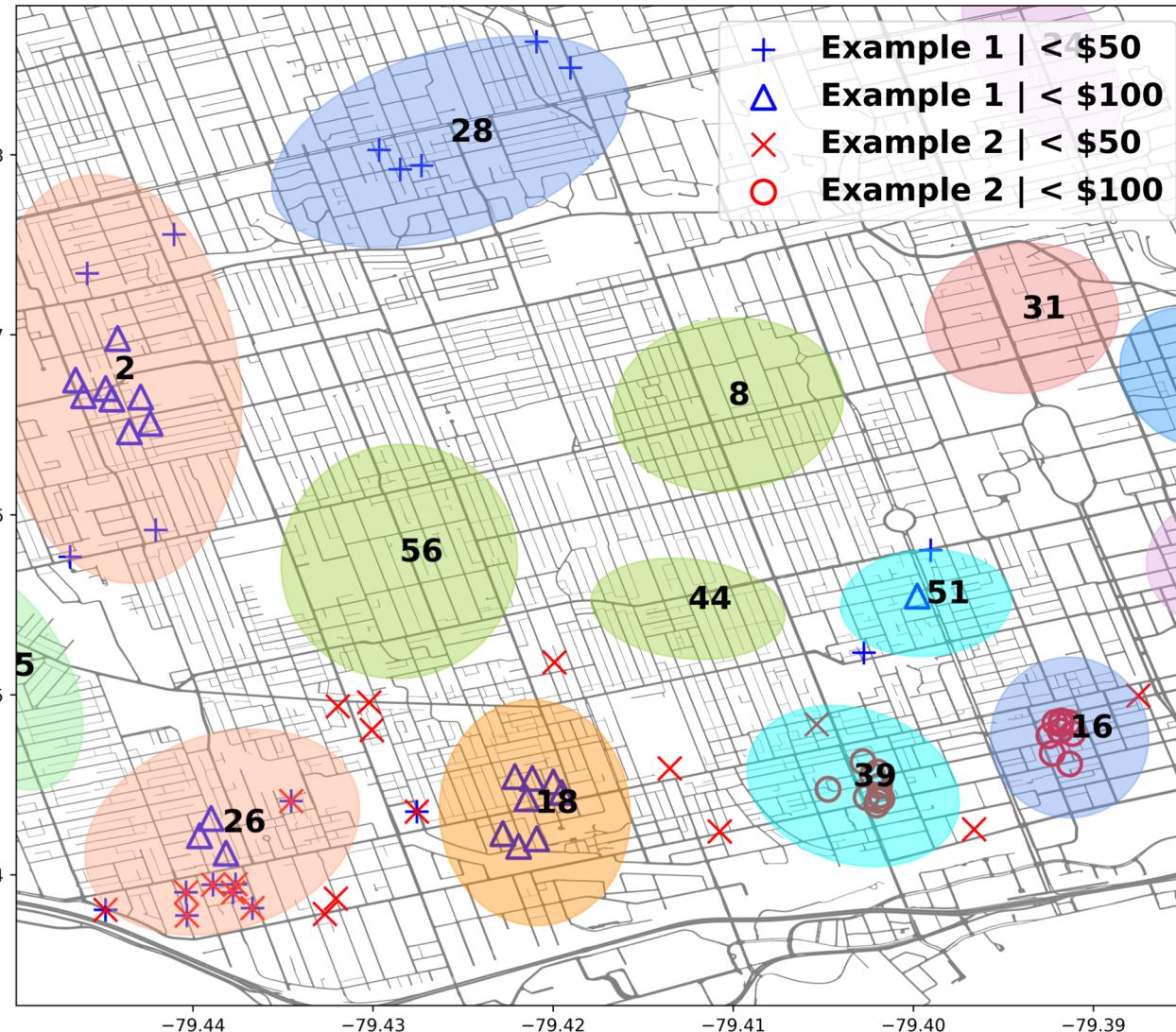
## Data:

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



# Results - Toronto

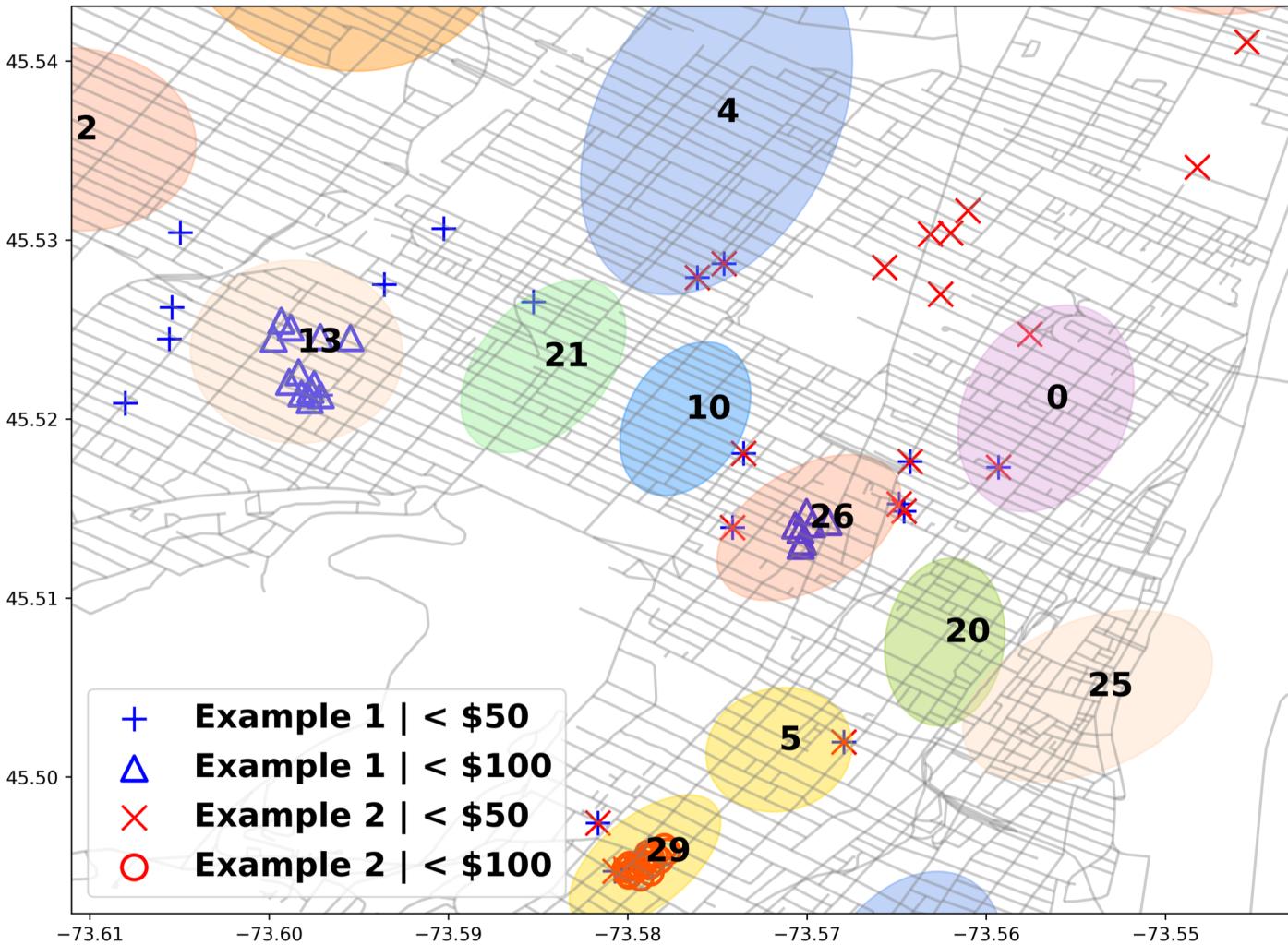
Example 1: ['hipster', 'hippy', 'art']   Example 2: ['clubs', 'nightlife']



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

# 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		76
13	<u>10.3</u>	5.3	603	\$122.17		24
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
29	<u>6.4</u>	<u>9.3</u>	728	\$125.02	Ville-Marie	30
					Ville-Marie	99

# Future directions

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- 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

