WHERE TO EXPERIENCE THE BEER-SCENE IN PORTLAND OREGON?

AND HOW DOES PORTLAND MAINE COMPARE?

Capstone Project - The Battle of Neighborhoods

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PORTLAND OREGON, BREWING

- Portland Oregon is known as Beer-Drinking City
  - **Oregonian, 2018: Portland named best U.S. city for beer drinkers**   **#1**
  - **Readers Digest: An Expert's Guide to the 10 Best Beer Cities in the World**   **#2**
  - **Best Cities for Beer Drinkers – 2019 Edition**   **#3**

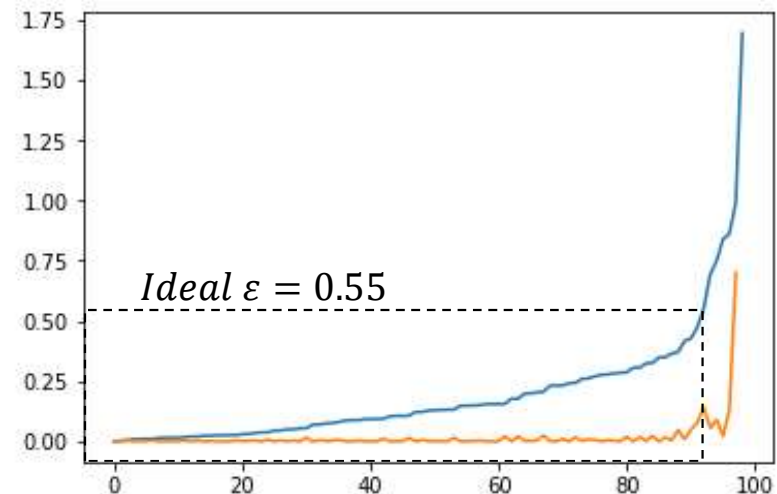- Where is the best place to go to tour the beer-scene in Portland, Oregon?
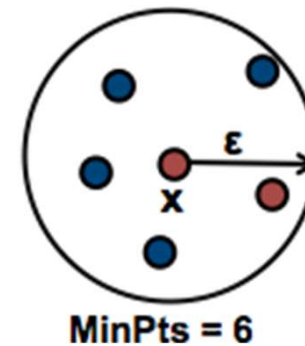
DATA - FOURSQUARE

- FourSquare is used to collect the data.
  - Name
  - Category – Brewery
    - 50327c8591d4c4b30a586d5d
  - Location (Latitude & Longitude)

- DBSCAN will be linked to id clusters.

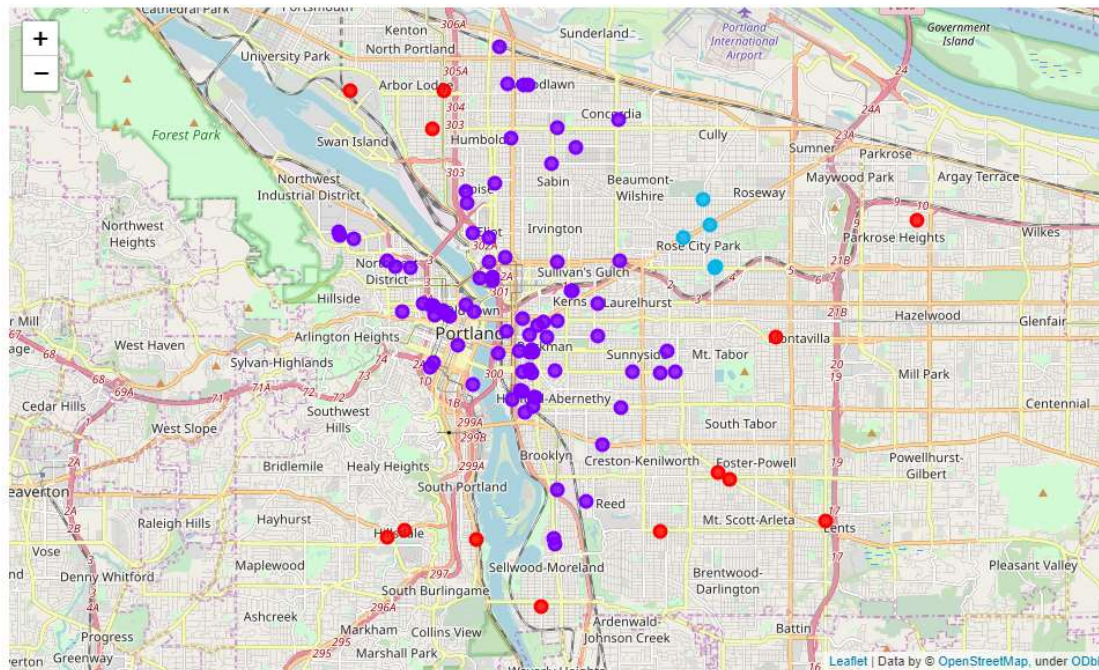|	name	categories	lat	lng
0	Cascade Brewing Barrel House	Brewery	45.516603	-122.655837
1	Base Camp Brewing	Brewery	45.519896	-122.656464
2	Deschutes Brewery Portland Public House	Brewery	45.524544	-122.681982
3	Culmination Brewing	Brewery	45.528877	-122.643690
4	Hair of the Dog Brewery & Tasting Room	Brewery	45.515866	-122.665682
5	Hopworks Urban Brewery	Brewery	45.496928	-122.634908
6	Modern Times Belmont Fermentorium	Brewery	45.516346	-122.659457
7	Fire on the Mountain	Brewery	45.522803	-122.648332
8	Wayfinder Beer	Brewery	45.520562	-122.663460
9	Migration Brewing	Brewery	45.526289	-122.636384

METHODOLOGY - DBSCAN

MinPts = 6

- DBSCAN - Density-Based Spatial Clustering of Applications
  - Identify nearest neighbors
  - Spatial problems
  - Key Factors:
    - Epsilon
      - Ideal = 0.55
      - Best result = 0.10
    - Minimum number of samples. = 3

Ideal $\varepsilon = 0.55$

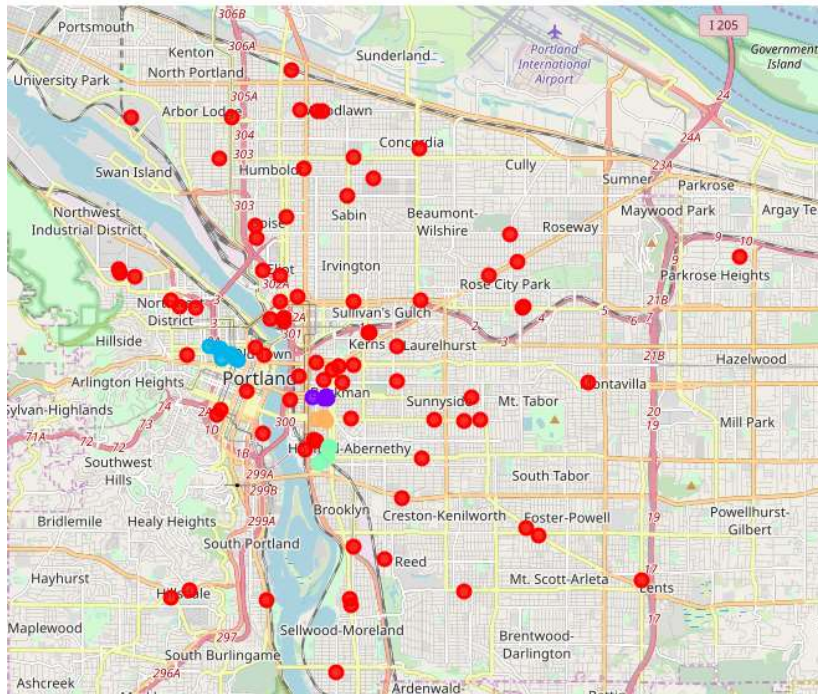**Derivative** – *Peak shows greatest change*

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RESULTS — PORTLAND, OR — CALC. EPSILON

- Main cluster (purple) is too large to be practical.
- Indicates Portland, OR has a lot of breweries close together.
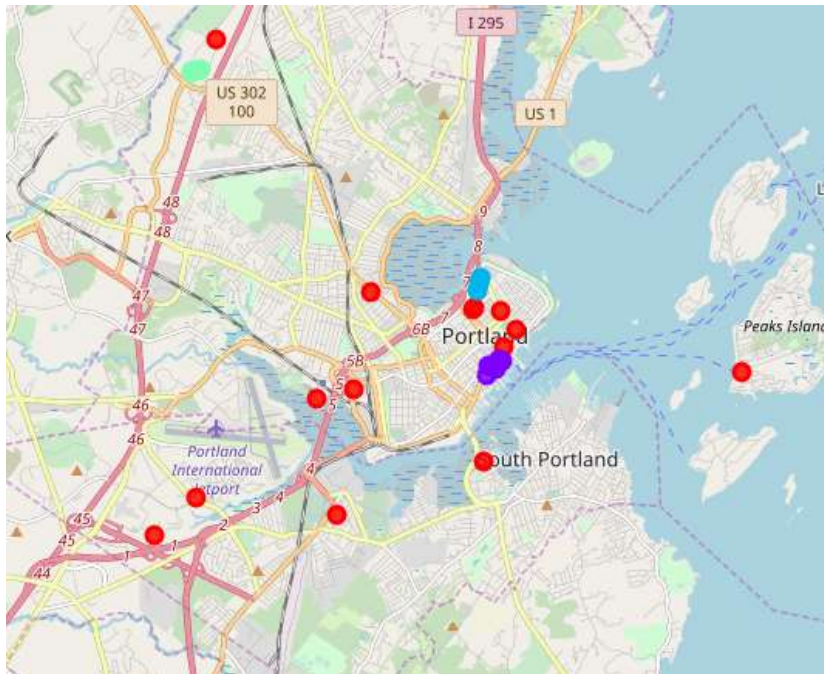- Need to reduce epsilon from 0.55.

RESULTS   PORTLAND, OR   EPSILON=0.1

Cluster	Breweries	Zoomed Map
2	Cascade Brewing Barrel House	
	Modern Times Belmont Fermentorium	
	Schilling Cider House Portland	
	Rogue Eastside Pub & Pilot Brewery	
3	Deschutes Brewery Portland Public House	
	Rogue Ales Public House & Distillery	
	Von Ebert Brewing	
	10 Barrel Brewing	
	Back Pedal Brewing	
	Backwoods Brewing Company	
	McMenamins Mission Theater	
	Splash Bar & Brewing	
	10 Barrel Rooftop	
	Little Big Burger	
4	Grixsen Brewing Company	
	Baerlic Brewing	
	Ladd Taphouse	
	Vagabond Brewing PDX	
5	Lucky Labrador Brew Pub	
	Eastside Distilling	
	Away Days Brewing	

- Best case with Epsilon at 0.1
- 4 key clusters identified!
- Red are outliers

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RESULTS   PORTLAND, ME EPSILON=0.1

- 3 key clusters identified!
- Red are outliers

Cluster	Breweries	Zoomed Map
2	Portland Mash Tun Liquid Riot Bottling Company Gritty McDuffs Brewing Company Sweetgrass Farm Wine & Distillery The Portland Beer Hub Maine Beer Tours	
3	Lone Pine Brewing Goodfire Brewing Company Urban Farm Fermentory Brewery Extrava	
4	Allagash Brewing Company Foundation Brewing Company Austin Street Brewery Definitive Brewing Company Battery Steele Brewing	

DISCUSSION

- Determining the ideal Epsilon for Portland Oregon did not work
  - Could be due to the large number of Breweries
    - Retest Ideal epsilon with
      - Other cities
      - Other venues
  - Redefine Ideal Epsilon
    - Program max number of locations to back out a key epsilon value.
    - Program specific distance range:

- Determine the actual distance of Epsilon.
  - Help Identify 'walking tour', 'bike tour', 'bus tour'
  - This could be used for any venue type and any city.

CONCLUSION

Where to experience the beer-scene in Portland Oregon?

- This study identified 4 key clusters of Breweries to visit.

- The largest cluster having 10 venues.

- Author recommends starting with Deschutes Brewery and a Mirror Pond Pale Ale.

How does Portland Maine compare?

- Portland Oregon is the superior beer drinking city.
  - Portland Maine has fewer breweries (29 vs. 99)
  - Portland Oregon has 1 more cluster
  - Despite this Portland Maine still has a respectable beer brewing culture.

Deschutes Brewery Portland Public House

Rogue Ales Public House & Distillery

Von Ebert Brewing

10 Barrel Brewing

Back Pedal Brewing

Backwoods Brewing Company

McMenamins Mission Theater

Splash Bar & Brewing

10 Barrel Rooftop

Little Big Burger

THANK YOU