

Dance Studio Placement

An IBM Data Science Capstone Project

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Dance Studios

Background

- Dance studios are places that teach dance to K-12 students
- Studios may offer a variety of classes:
 - Hip-hop
 - Contemporary
 - Jazz
 - Ballet
- Great places for students to find an athletic and creative outlet



Dance Studios

Business Needs

- Though they can be places full of creativity and fulfillment, a studio is still a business
- For a studio to succeed it needs:
 1. To avoid competition with other studios
 2. A good student base
 3. Qualified teachers
 4. Parent support
 5. Places for performances and recitals

The goal is to answer the question:

“What is an ideal place to start a dance studio in Atlanta, GA?”



Data

- The majority of the data were found by scraping webpages and geocoding the features:
 - Zip codes in and around Atlanta – <https://www.realsourcebrokers.com/atlanta-zip-code-map/>
 - List of colleges and universities – [https://en.wikipedia.org/wiki/List_of_colleges_and_universities_in_Georgia_\(U.S._state\)](https://en.wikipedia.org/wiki/List_of_colleges_and_universities_in_Georgia_(U.S._state))
 - List of public schools in Georgia – <http://georgia.educationbug.org/public-schools/county-fulton.html>
- Existing dance studios, grocery stores, and performance arts venues were found using the Foursquare API
 - Unnecessary venues were dropped from the data returned from Foursquare

Methodology

Preliminary Analysis

- Compile all of the venues onto a map
- Visually inspect for areas far from existing studios and with multiple desired features

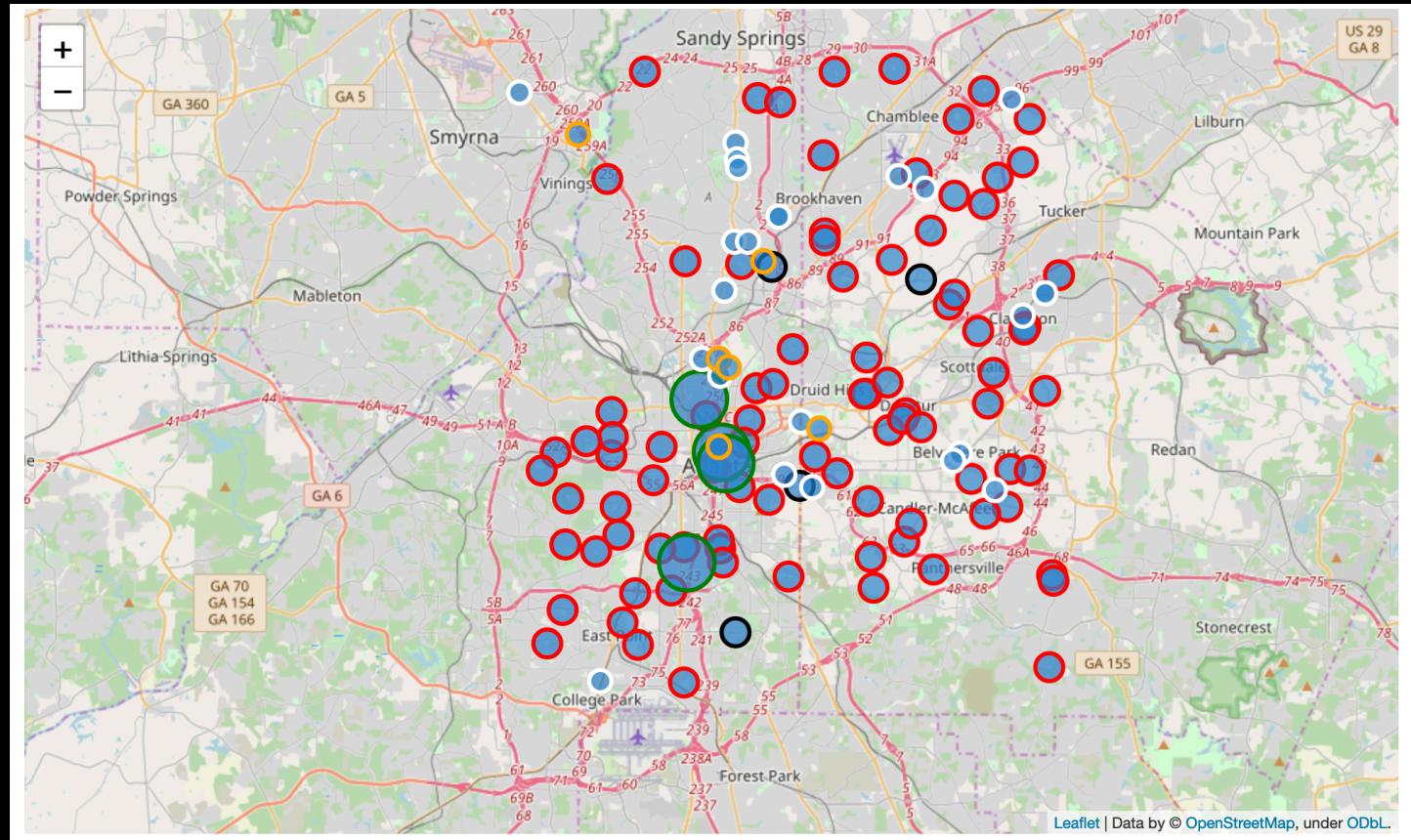
Fine Analysis

- Use DBSCAN to create clusters from the location data
- Inspect and rank clusters based on their inclusion of all of the features
- Take zip code of center point of cluster to be an ideal area

Results

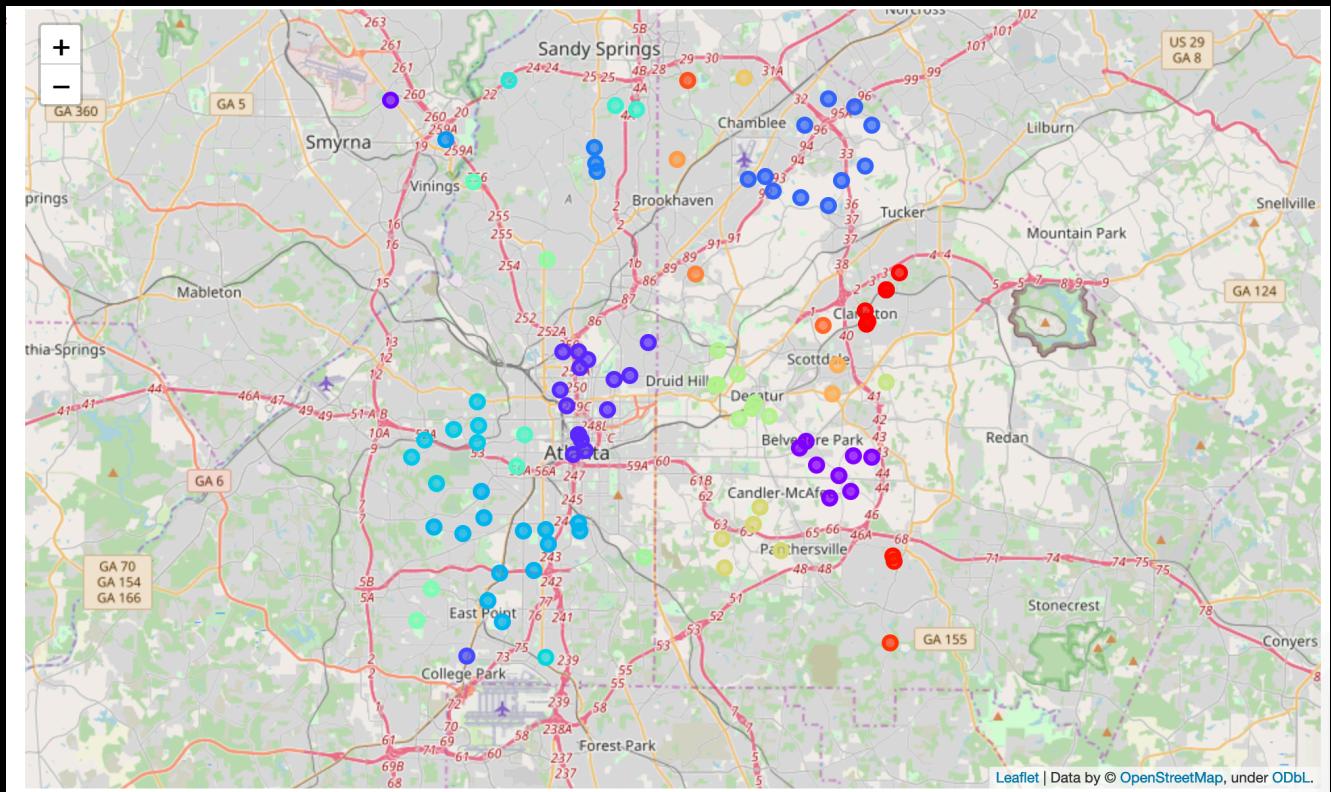
This is a map containing all of the venues found after cleaning the data.

- Black - existing studio
- Red - public school
- Green - college
- White - grocery store
- Orange - performing arts venue



Results

The map showing the DBSCAN clusters. In total, 27 clusters were formed.



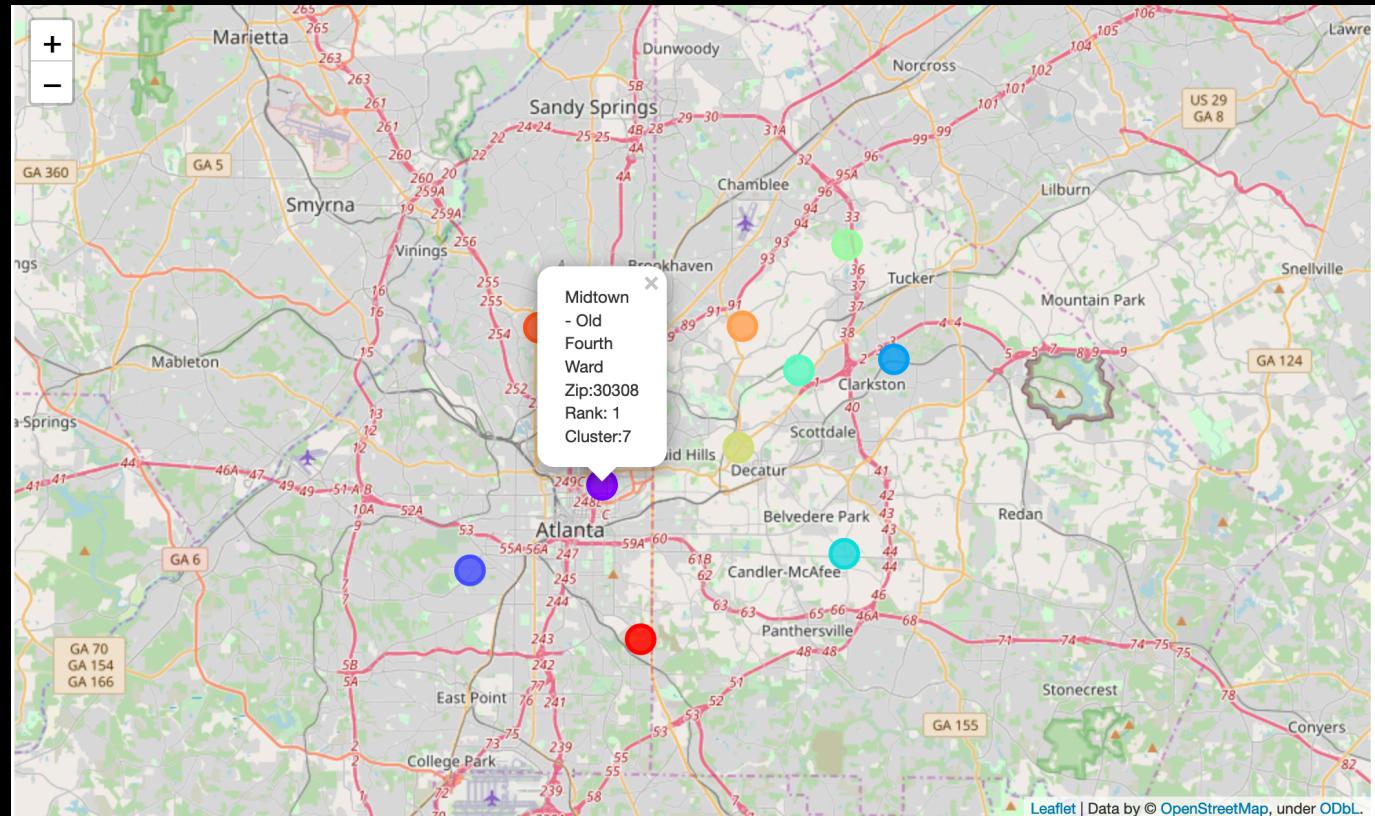
Results

Data frame containing the top 10 best clusters.

Cluster	Zip Code	Neighborhood	School	College	Grocery Store	Performing Arts Venue	Center Lat	Center Lon
0	7	30308	Midtown - Old Fourth Ward	True	True	True	True	33.767884 -84.374371
1	8	30310	Adair Park - Capitol View - Oakland City - Wes...	True	True	True	False	33.732329 -84.439929
2	0	30021	Clarkston	True	False	True	False	33.819506 -84.228496
3	2	30032	East Lake - South Decatur	True	False	True	False	33.739440 -84.253608
4	3	30033	North Decatur	True	False	True	False	33.815104 -84.276034
5	20	30345	Briarcliff Woods - Oak Grove - Northlake	True	False	True	False	33.866952 -84.252094
6	1	30030	City of Decatur - Oakhurst - Winnona Park	True	False	False	False	33.783263 -84.306297
7	4	30033	North Decatur	True	False	False	False	33.833160 -84.304091
8	6	30305	Buckhead - Garden Hills - Haynes Manor - Peach...	True	False	False	False	33.832985 -84.405778
9	9	30315	Grant Park - Peoplestown - Lakewood	True	False	False	False	33.703996 -84.355203

Results

Map showing the center points of the top 10 clusters. The best area was in Midtown, Atlanta.



Discussion

- Only 3 existing dance studios were found — very likely more in actuality
- Colleges, grocery stores, and performance venues a bit sparse too
- Ranking system is basic and only depends on IF there is 1 of each feature present
- Overall, Midtown seems to be the best place, followed closely by Oakland City

Conclusion and Further Work

- The method here seems to be a valid way to use geographic data to determine a desirable area to start a dance studio, so far as data are sufficient
- Much room for improvement:
 - Private schools
 - Public transportation
 - Income data
 - Dance competitions
 - Grade level targeting
 - Weighted cluster rating

Thank you!