

Relocation around Minneapolis-St. Paul-Bloomington Metropolitan

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Introduction

Background

With relocation comes a key decision on where to live. There are many different factors affecting this decision but we can use data to help classify neighborhoods based on these different factors.

Problem

When relocating, people face the challenge of deciding where to live. It may not be possible to find an exact match as the neighborhood that they currently reside in but we can find similarities

Interest

Two of the main factors are home value and its community, which both can be classified using data. For purpose of this analysis, the area will be focused on individual moving from St. Paul to the Minneapolis area.

Data Analysis

Data Sources

1. **Neighborhood house price data:**
<https://www.zillow.com/research/data/>
2. **Neighborhood venue data:**
<https://foursquare.com/>

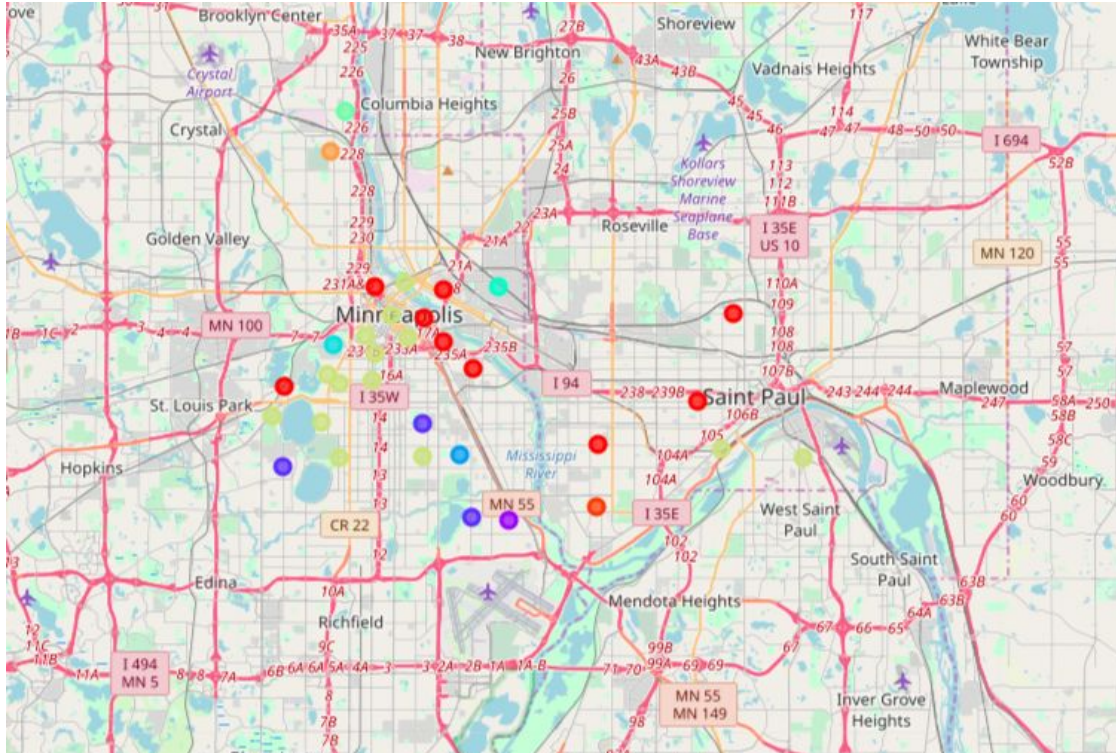
Data Cleaning

1. **Extract neighborhood house price for Minneapolis-St. Paul-Bloomington Metropolitan only.**
2. **Use the most recent month data.**

Pre-analysis Process

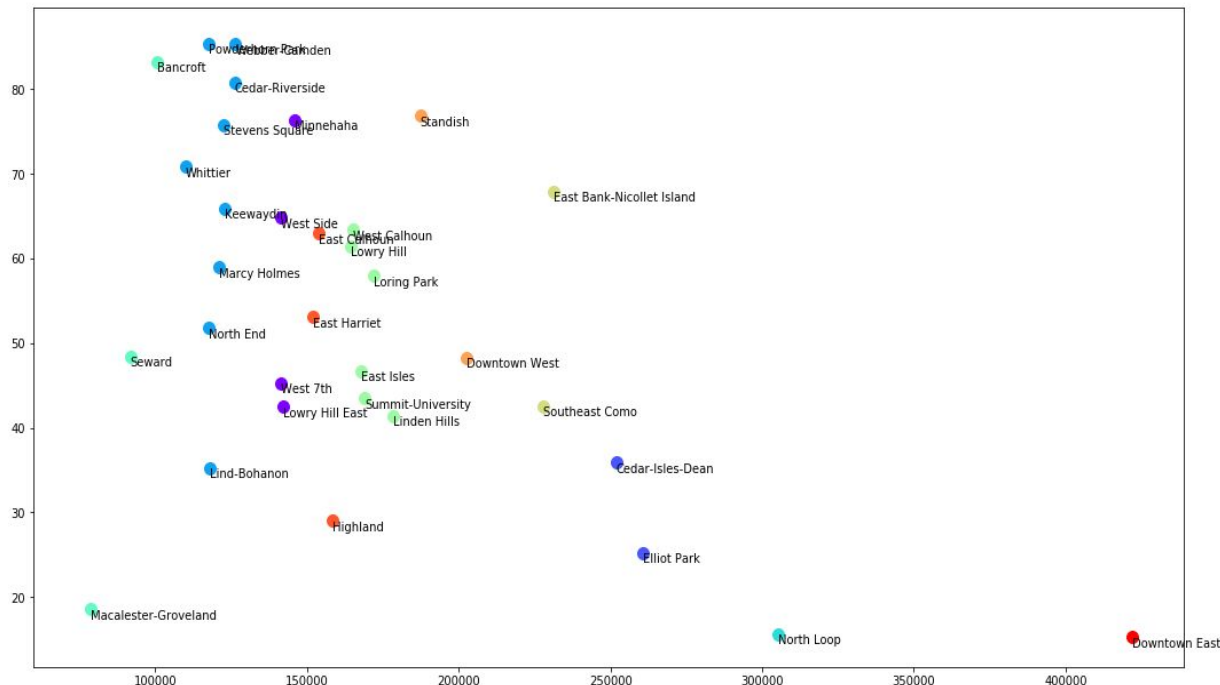
1. **Merge and join neighborhood position with house price data (both house value and increase value).**
2. **Attach gps data to neighborhood for mapping.**

Cluster of Neighborhoods based on Venue



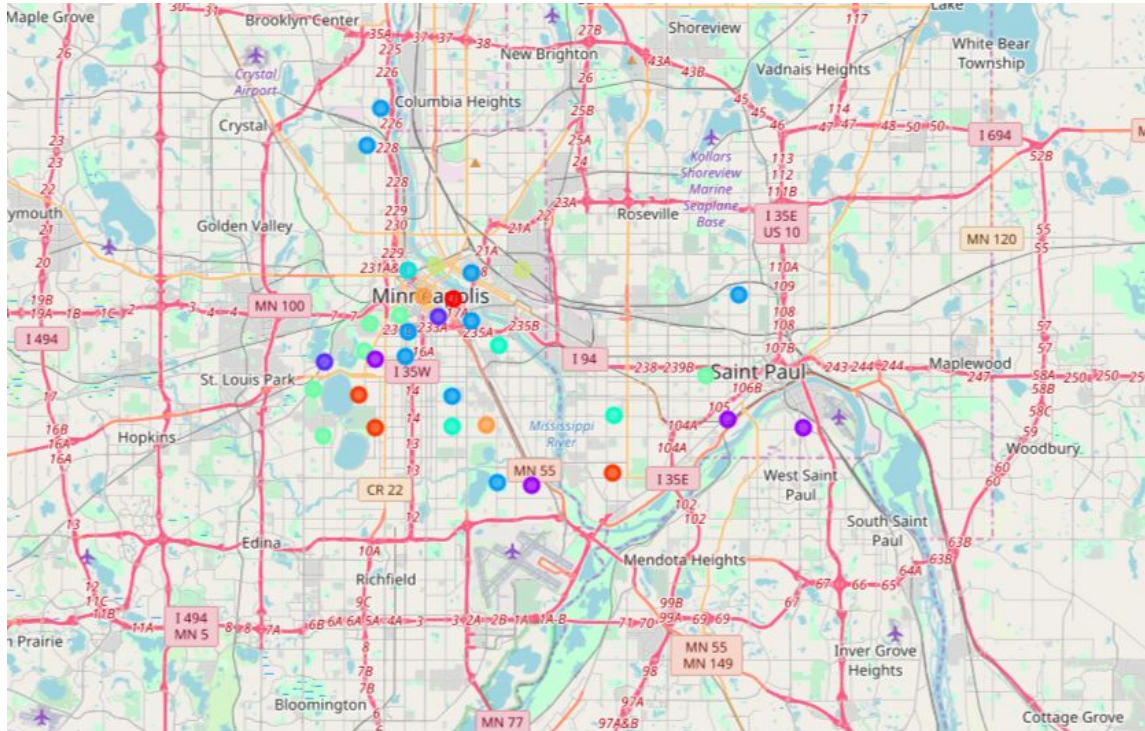
- Over **30** sample data points were sorted into **10** clusters based on venue data from foursquare.
- **70%** of the neighborhoods (23) were sorted into **2** clusters, indicating that venue type around MSP metropolitan shows homology.

Cluster of Neighborhood based on Price



- Over **30** sample data points were sorted into **10** clusters based on house price data from zillow.
- Compared to venue type distribution, house price among neighborhood samples were more widely distributed.

Cluster of Neighborhood based on Price



- On the map, house price around Minneapolis shows more diversity, indicating that relocation from Saint Paul is likely to find a match
- House price within the same cluster(same color) locates near to each other, showing the consistency of neighborhood based house price.

Target Neighborhood based on Price and Venue

	Current Neighborhood	Current City	Target City	Target Neighborhood
0	Highland	Saint Paul	Minneapolis	East Harriet
1	Macalester-Groveland	Saint Paul	Minneapolis	Bancroft, Seward
2	West Side	Saint Paul	Minneapolis	Minnehaha, Lowry Hill East

- After extracting the neighborhoods that share the same index in both Price cluster and Venue cluster, there're candidates from both Saint Paul and Minneapolis, which is the suggested relocation matched neighborhood
- 3 Neighborhoods from Saint Paul, Highland, Macalester-Groveland, and West Side, will be able to find similar neighborhoods in Minneapolis. Those similar neighborhoods will be around the same price level and venue around as in the Saint Paul neighborhoods.

Suggested Neighborhood based on Price/Venue

	Current Neighborhood	Current City	Target City	Suggested Neighborhood_Price	Suggested Neighborhood_Venue
0	Highland	Saint Paul	Minneapolis	East Calhoun, East Harriet	Downtown East, East Bank-Nicollet Island, Southeast Como, Downtown West, Standish, Linden Hills, Loring Park, East Harriet, Lind-Bohanon, Whittier, Bancroft, Seward
1	Macalester-Groveland	Saint Paul	Minneapolis	Bancroft, Seward	Downtown East, East Bank-Nicollet Island, Southeast Como, Downtown West, Standish, Linden Hills, Loring Park, East Harriet, Lind-Bohanon, Whittier, Bancroft, Seward
2	North End	Saint Paul	Minneapolis	Webber-Camden, Cedar-Riverside, Keewaydin, Stevens Square, Marcy Holmes, Lind-Bohanon, Powderhorn Park, Whittier	NaN
3	Summit-University	Saint Paul	Minneapolis	Linden Hills, Loring Park, East Isles, West Calhoun, Lowry Hill	NaN
4	West 7th	Saint Paul	Minneapolis	Minnehaha, Lowry Hill East	NaN
5	West Side	Saint Paul	Minneapolis	Minnehaha, Lowry Hill East	North Loop, Elliot Park, Cedar-Isles-Dean, Minnehaha, Lowry Hill East, Webber-Camden, Keewaydin, Powderhorn Park

- Not all neighborhoods from Saint Paul have match in both venue and price. So a suggested neighborhoods list was generated for more possible choices, in which common cluster is either in price or venue.

Conclusion

- With the result forms of data, we can use clusters to find similar neighborhoods, to determine the best or suggested relocation target in Minneapolis.
- For some neighborhoods it's difficult to have an exact match based on the limited data.
- Similar clusters can be used when factoring other features, such as school district, proximity to downtown, etc.

