Creating a neighborhood recommender tool

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EXECUTIVE SUMMARY

- International mobility is trending
- Private persons don’t leverage digital tools compared to companies:
  - Rely on manual research / recommendations
  - Identification of potential target destinations could be automated
- Recommender tool was created
- Tool was successfully applied to a test case
- Performance of tool seems promising, but still has certain shortcomings

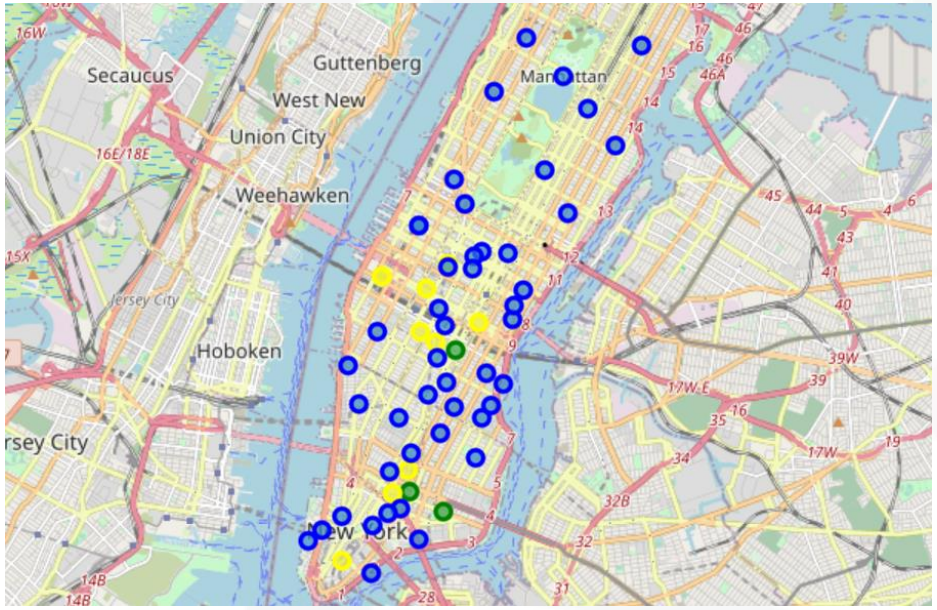
INTRODUCTION

- International mobility is on the rise
- While companies like Airbnb or Uber already rely heavily on data-driven tools, private persons do not
- Support tools to identify attractive neighborhoods to move into could be deployed
- Assumption: People look for similarity in current and taret destinations
- Test case: A young professional from Berlin wants to move to a neighborhood in Manhattan and wants to know which of the neighborhoods has the highest similarity to Berlin.

METHODOLOGY

- Relevant neighborhoods were defined and scraped from Wikipedia
- Geodata was added through geolocator tool
- Relevant venues were extracted for each neighborhood from Foursquare API
- Recommender tool was created based on the example of the movie recommender in-class example
  - Neighborhood profile by venue types was created
  - Similarity score for target neighborhoods was calculated based on availability of same venue types
- A map was created to visualize the neighborhoods depending on their similarity score

RESULTS



- All neighborhoods in Manhattan were tested on similarity
- The 3 most similar are marked green, the rest of top 10 in yellow
- Most similar neighborhood in the downtown area
- The 3 most similar neighborhoods:

Neighborhood	Similarity-Score
Bowery	153
Lower East Side	152
Rose Hill	150

DISCUSSION

- Tools works as intended, which can be seen as huge success!
- The algorithm is very flexible and could easily be changed in a few minutes i.e. to a case where a person wants to move from Toronto to Chicago
- Some locations turn out to be misplaced -> bug?
- applicability of the similarity score requires further testing with more cases

PRO & CON OF THE MDOEL

Success

- Tool works properly for the given test case
- The methodology is robust and flexible
- The map makes results more readable and convenient

Shortcomings

- 2 locations were misplaced by the geolocator
- The similarity score can be refined by using venue occurrence as difference to the base value instead of an independent integervalue

CONCLUSION

- Tool successfully yielded wanted results of similar neighborhoods
- can be easily adapted to changes in desired neighborhoods
- still seems to has some issues with the geolocator sometimes