Exploring the potential location to investing Chinese Restaurant near The University of Texas at Austin

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Introduction

Austin is a fast growing cities in Texas, US. Forbes in 2017 ranked Austin #1 on its list for the "Next Biggest Boom Town in the U.S. With this trend, The University of Texas at Austin emerged as a major university in US. The institution now has over 50,000 undergraduate and graduate students and over 24,000 faculty and staff. However, it’s always difficult to find a good Chinese restaurant near this excellent school. It’s a great opportunity to invest Chinese restaurants and enter this high-potential

market. So, in this project, We will explore to find an optimal location for a restaurant. Specifically, this report will be targeted to opening an Chinese restaurant in Austin, Texas, America. We will try to detect locations that are with least number of Chinese restaurant and are as close to The University of Texas at Austin as possible. We want to help people who are interested in investing a Chinese restaurant in Austin and bring more delicious foods to this fascinating city.

Data Description and acquisition

Location data will play a tremendous role in this project. We will use venue information and addresses data to find optimal location for investing a Chinese restaurant. Therefore, we will mostly utilize FourSquare data API and Google Maps API. Venue information are obtained via FourSquare API based on coordiates and approximate addresses of University of Austin obtained from Google Maps API.

Methodology

We will direct our efforts on detecting areas of the University of Texas at Austin that have low restaurant density, particularly those with low number of Chinese restaurants.

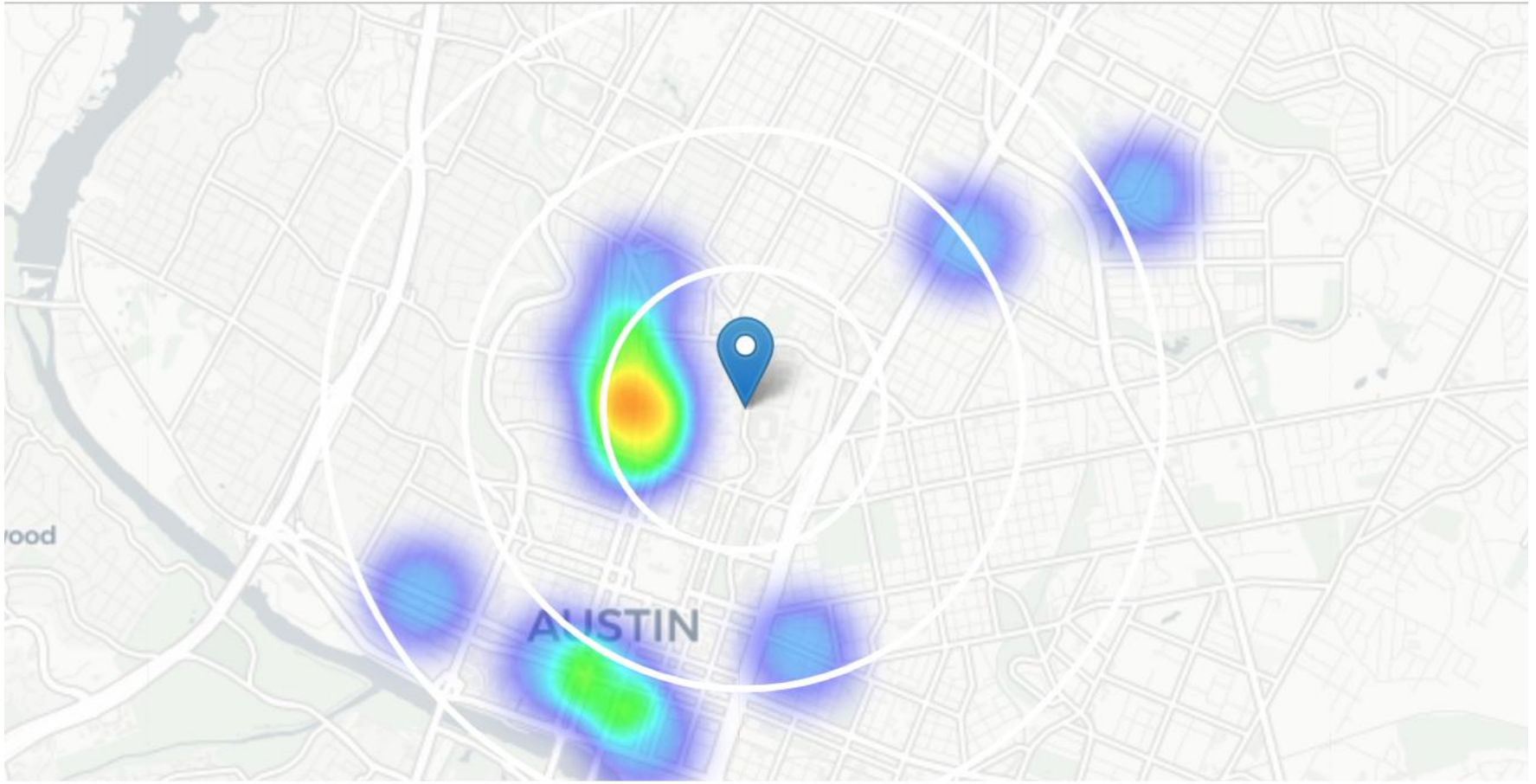
First step: we collect the required data: location and type (category) of every restaurant within 6km from the University of Texas at Austin. We also identify Chinese restaurants (according to Foursquare categorization).

Second step: our analysis will calculate and explore restaurant density across different areas of Austin - we will use heatmaps to identify a few promising areas close to center with low number of restaurants in general (no Chinese restaurants in vicinity) and then focus our attention on those areas.

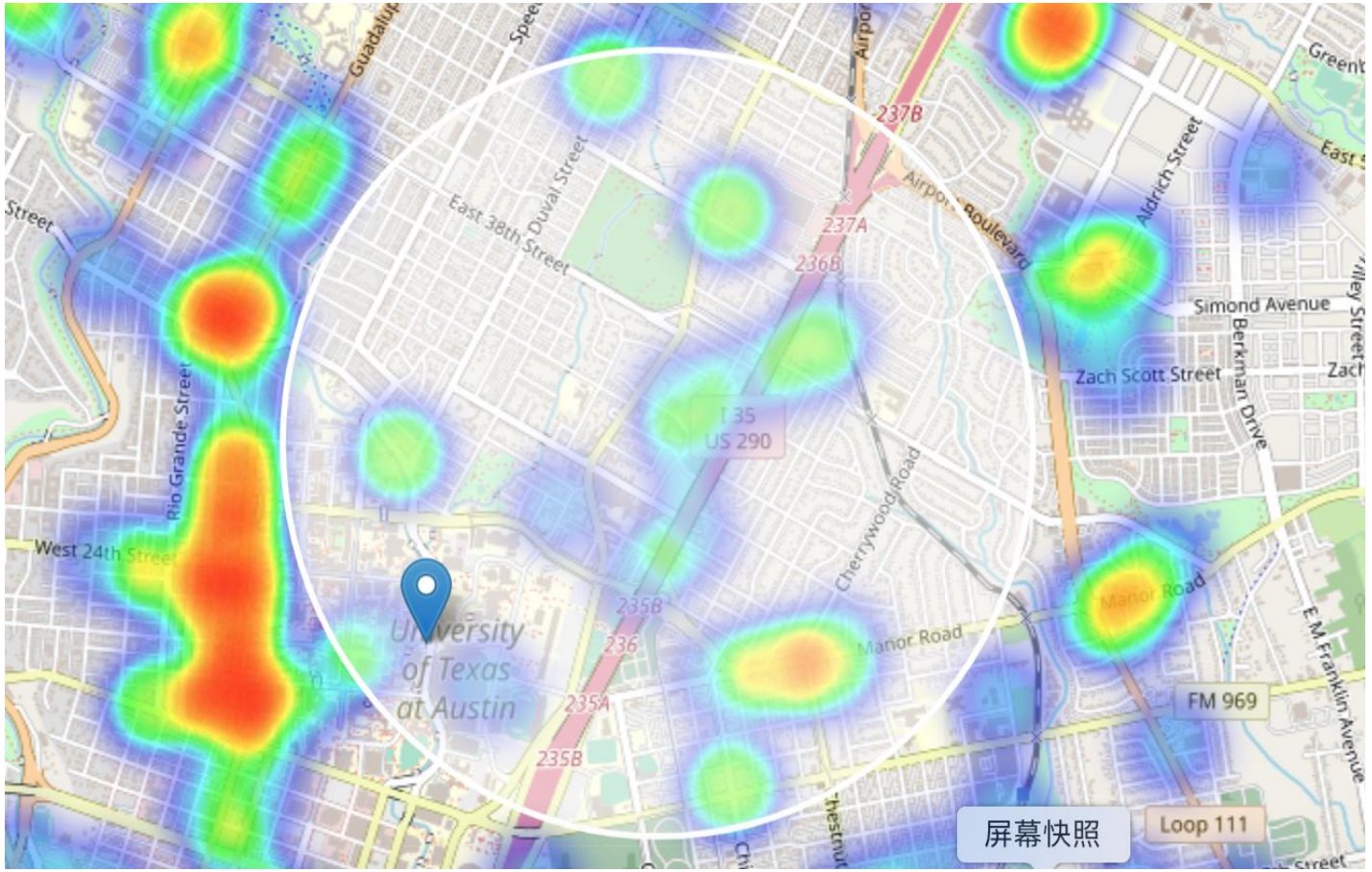
In third and final step: we will focus on most promising areas and within those create clusters of locations that meet some basic requirements established : we will take into consideration locations with no more than two restaurants in radius of 250 meters, and we want locations without Chinese restaurants in radius of 1000 meters. Moreover, we will use data from Foursquare to explore the venues in these promising areas to check the feasibility . Finally, We will present map of all such locations but also create clusters of those locations to identify general zones / neighborhoods / addresses which should be a starting point for final street level exploration and search for optimal venue location by stakeholders.

Analysis

By using Heatmap, we found low Chinese restaurant density positioned east, south-east and north from school center.

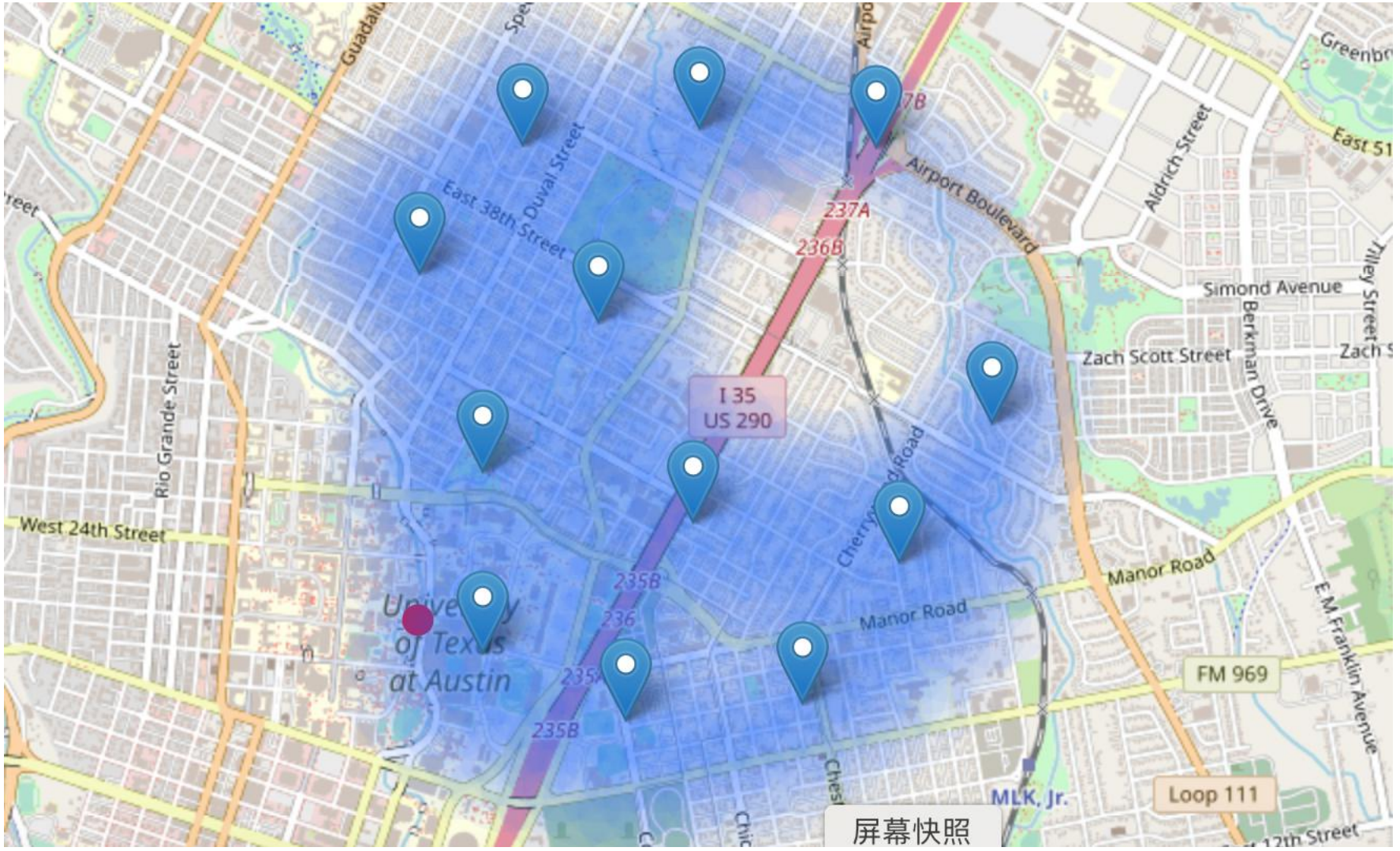

AUSTIN

Based on this we will now focus our analysis on areas north and east from the University of Texas at Austin - we will move the center of our area of interest and reduce it's size to have a radius of **2.5km**. This places our location candidates in boroughs Hyde Park and Central East Austin



Finally, We created 12 addresses representing centers of zones containing locations with low number of restaurants and no Chinese restaurants nearby, all zones being fairly close to the University of Texas at Austin

center (above half of those less than 3km from). These centers/addresses should be considered only as a starting point for exploring area neighborhoods in search for potential restaurant locations. Most of the zones are located in Hyde Park and Central East Austin boroughs.


East 38th Street
Duval Street
Airport Boulevard
237A
236B
Aldrich Street
Simond Avenue
Berkman Drive
Zach Scott Street
Rio Grande Street
West 24th Street
I 35
US 290
Cherrywood Road
Manor Road
235B
236
University of Texas at Austin
FM 969
E.M. Franklin Avenue
MLK, Jr.
Loop 111
屏幕快照

Results and Discussion

Our analysis shows that although there is a lot of restaurants near the University of Texas at Austin, there are pockets of low restaurant density in south and east form school. Highest concentration of restaurants was detected south and west from school, so we focused our attention to areas north and east, corresponding to boroughs Hyde Park and Central East Austin.

Result of all this is 12 zones containing largest number of potential new restaurant locations based on number of and distance to existing venues - both restaurants in general and Chinese restaurants particularly. This, of course, does not imply that those zones are actually optimal locations for a new restaurant! Recommended zones should considered only as a starting point for more detailed analysis which could eventually result in location which has not only no nearby competition but also other factors taken into account and all other relevant conditions met.

Conclusion

Purpose of this project was to identify the University of Texas at Austin areas close to center with low number of restaurants (particularly Chinese restaurants) in order to aid stakeholders in narrowing down the search for optimal location for a new Italian restaurant. Final decision on optimal restaurant location will be made by stakeholders based on specific characteristics of neighborhoods and locations in every recommended zone, taking into consideration additional factors like population size, real estate availability, prices, social and economic dynamics of every neighborhood etc.