

Exploring the potential  
location to investing Chinese  
Restaurant near UT-Austin

# Problem:

- 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.
- However, it's always difficult to find a good Chinese restaurant near this excellent school, which means there is a huge market to explore.
- Business ventures are trying to take up this demand and are coming up with a lot of Chinese and Asian food related offerings.
- Location of a restaurant is vital in the business growth and profitability.
- We can predict the profitable locations in a city where owners can open their stores for selling Chinese foods.

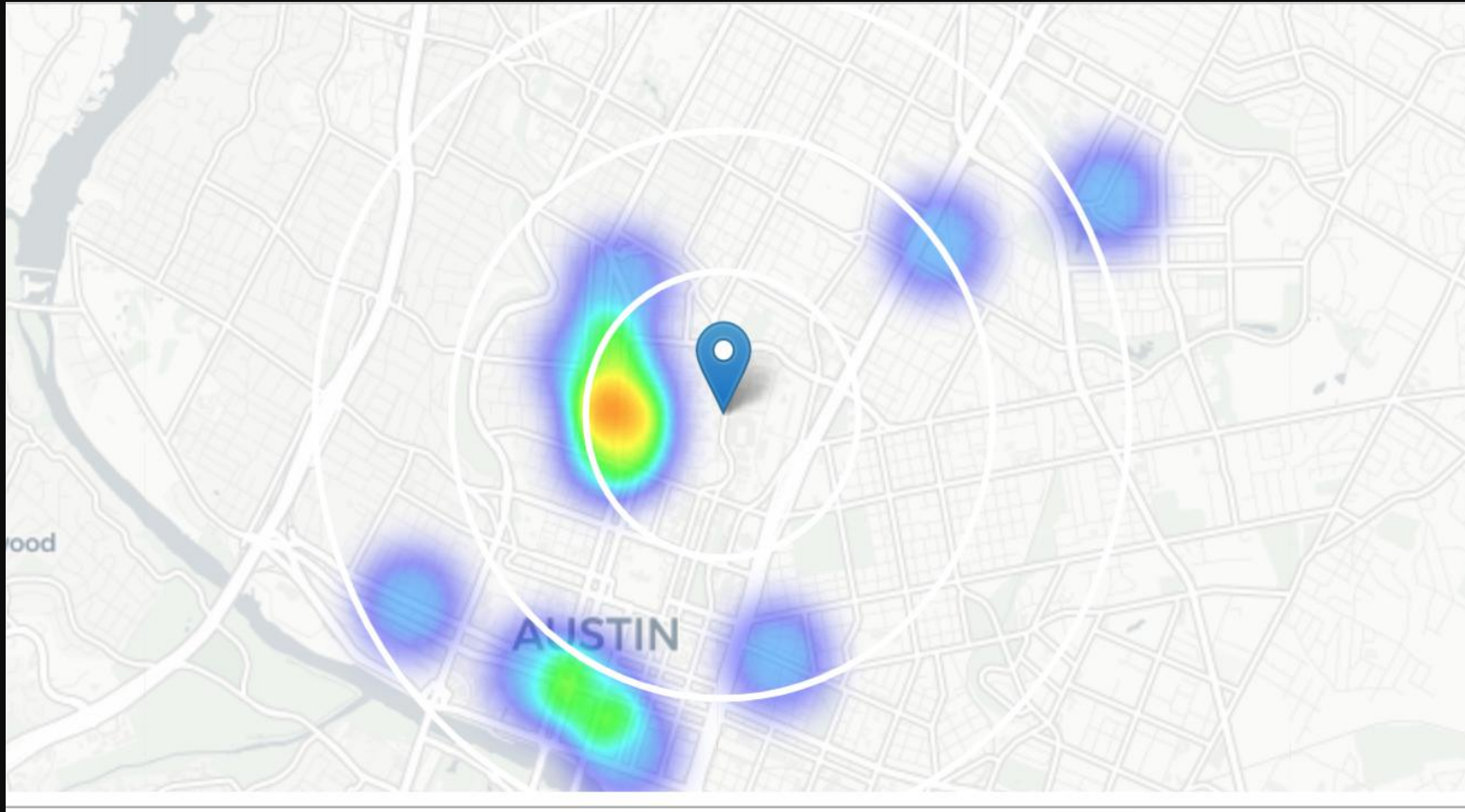
# Data:

- Google provides Geo APIs which return the geographical information of UT-Austin and Austin
- Foursquare provides APIs which return venues by search terms - we fetch venues for 'Restaurant' using Places API by Foursquare for building our base dataset of locations.
- Then we append both the datasets and remove unnecessary columns to arrive at our required set of data containing venue name, address and the latitude and longitude.

# Methodology for prediction:

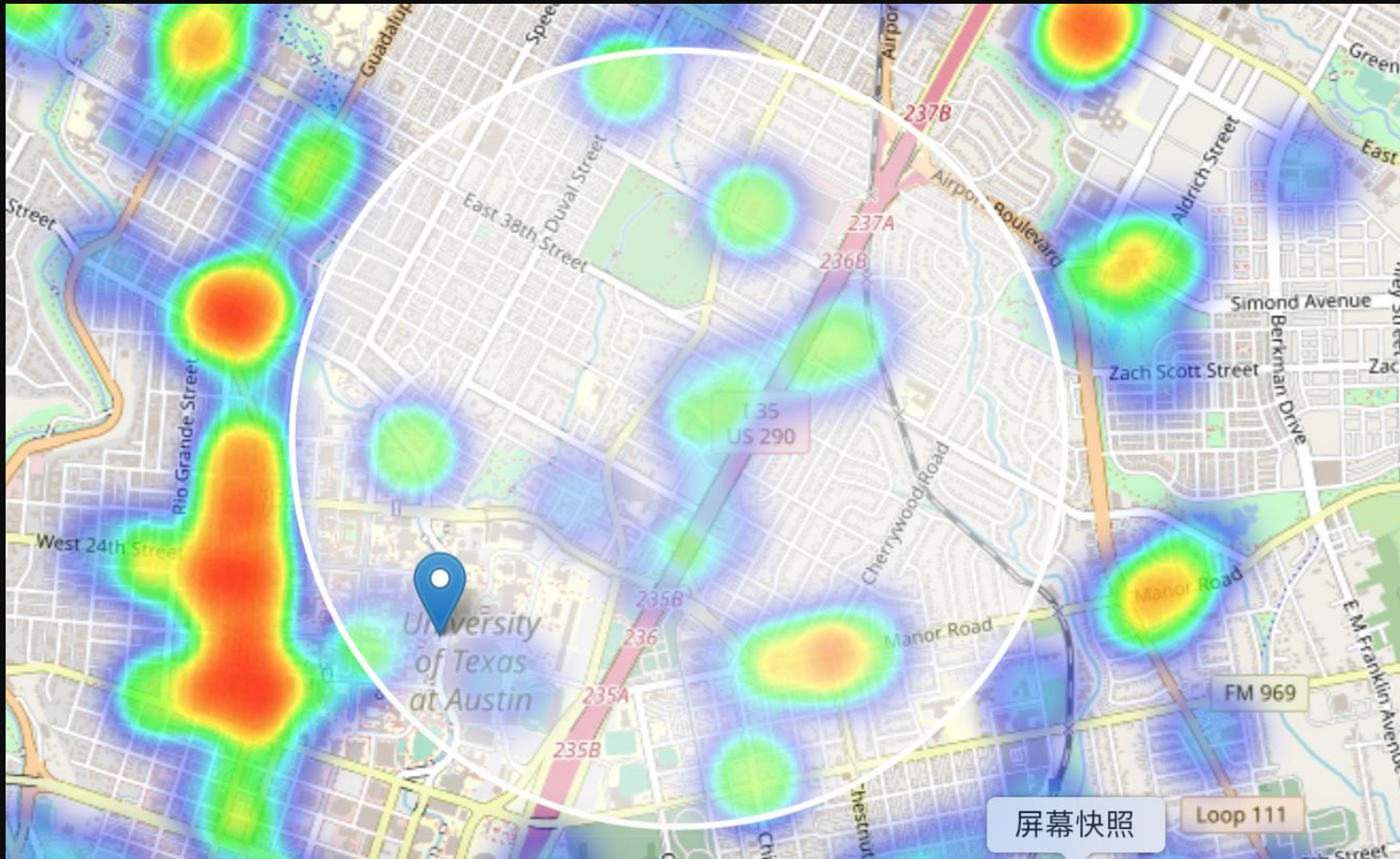
- We will direct our efforts on detecting areas of the University of Texas at Austin that have low restaurant density, particularly those with low number of Chinese restaurants.
- First step: we collect the required data: location and type (category) of every restaurant within 6km from the University of Texas at Austin.
- 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 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. 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.

# Analysis:



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

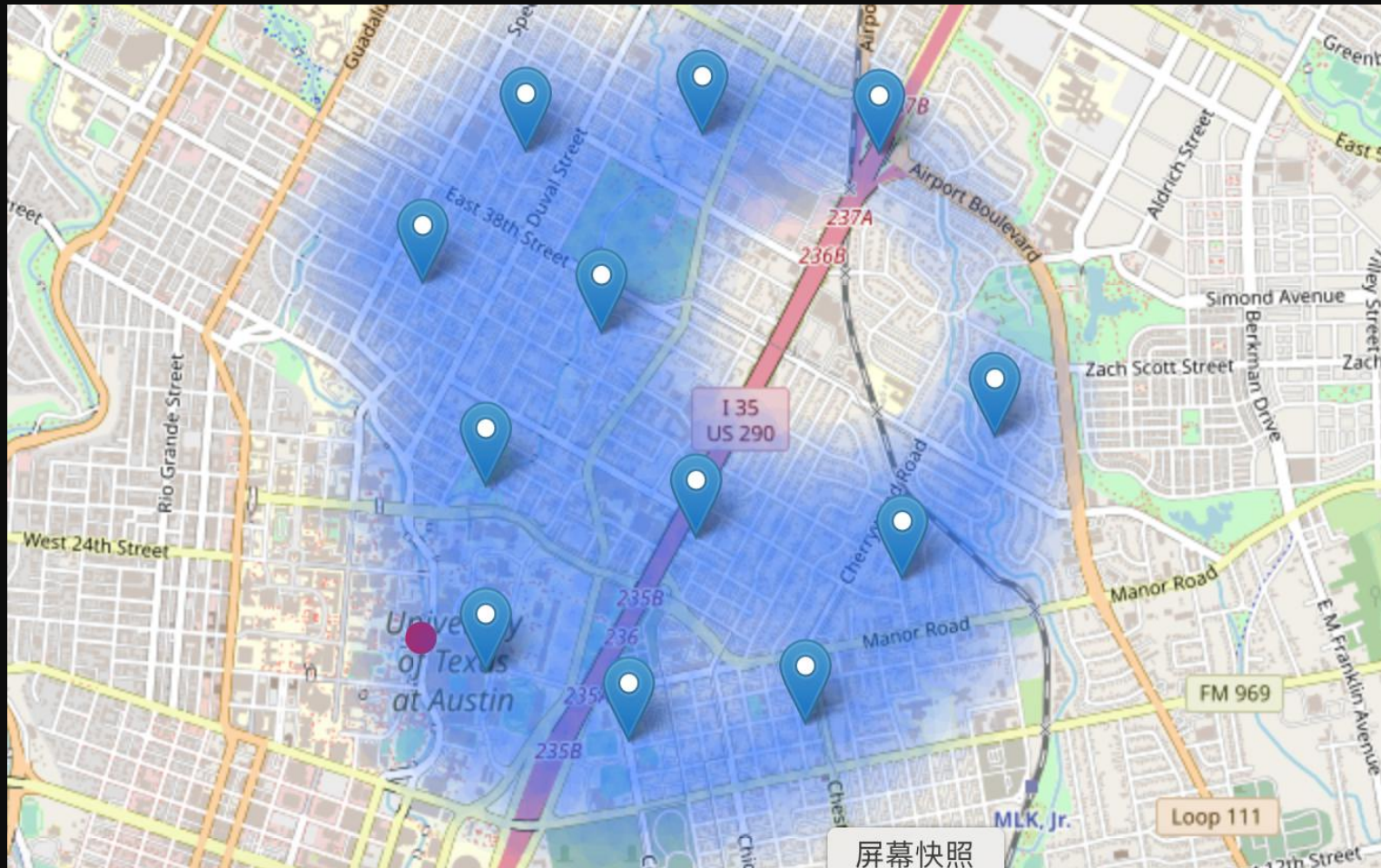
## Analysis:



Now, we 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



# Analysis:



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.

# Discussion:

- 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.
- Recommended zones should be 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.