



Predicting an optimal location for a Hot Pot restaurant

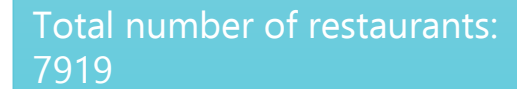
Caoyu
25 August 2019





- Chengdu is a UNESCO world food capital. Sichuan hot pot is the most popular and famous food in chengdu
- Datalization of the location of a hot pot restaurant can help analyze the location of a newly opened hot pot restaurant. Factors such as the number of hotpot restaurants in each block, the distance to the city center, and the data of nearby shopping malls are available
- Machine-learning algorithms can help investors choose a suitable address in chengdu to open a new hotpot restaurant





Percentage of Hot Pot restaurants: 6.21%

Average number of restaurants
in neighborhood:
21.755494505494507

basic explanatory data analysis and derive some additional info from our raw data.

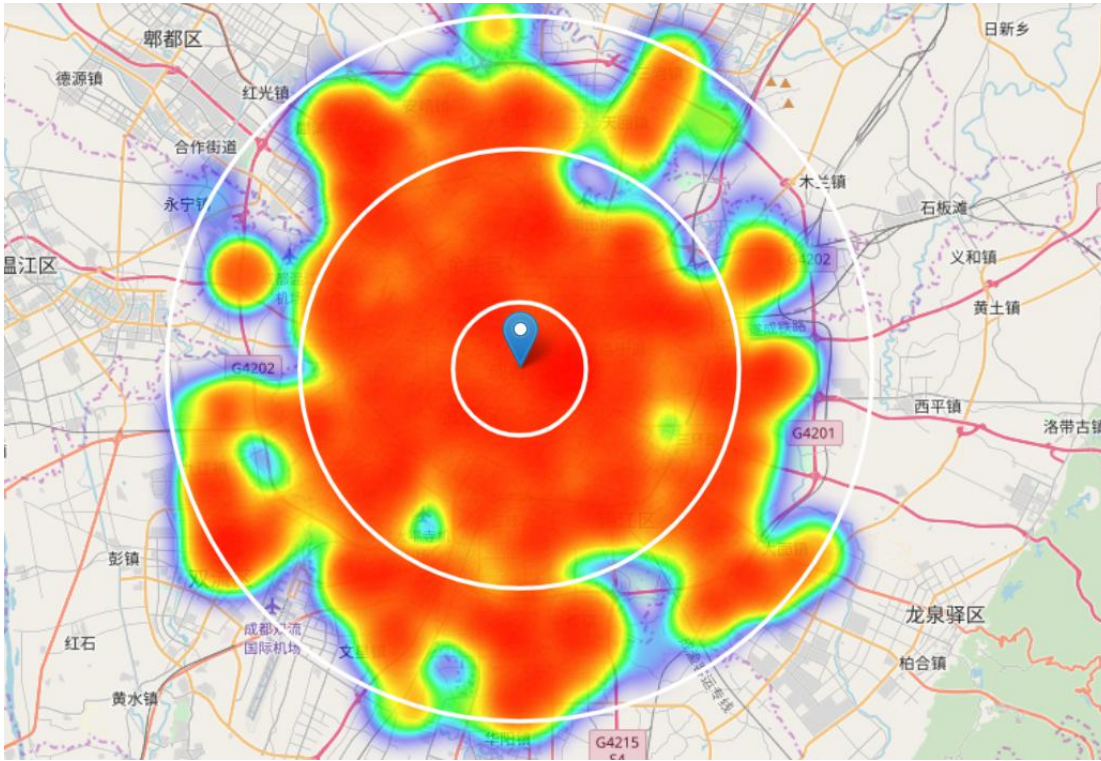


Fig:heat map of restaurant

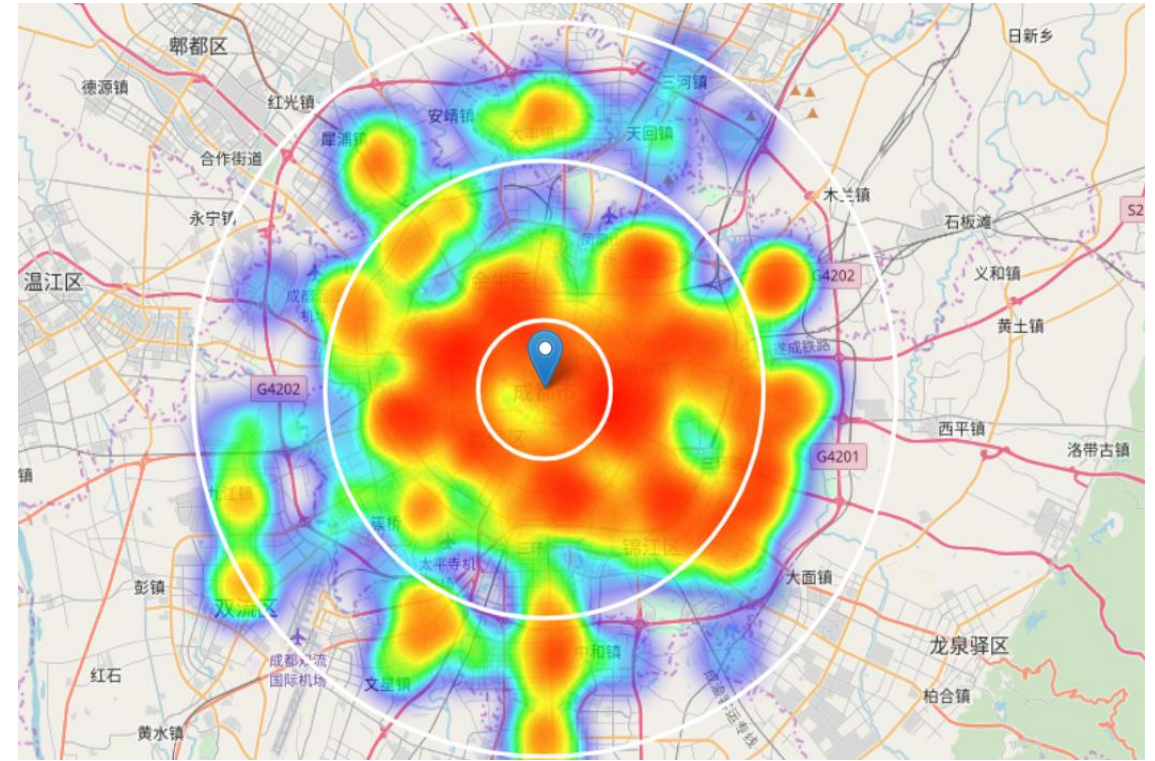
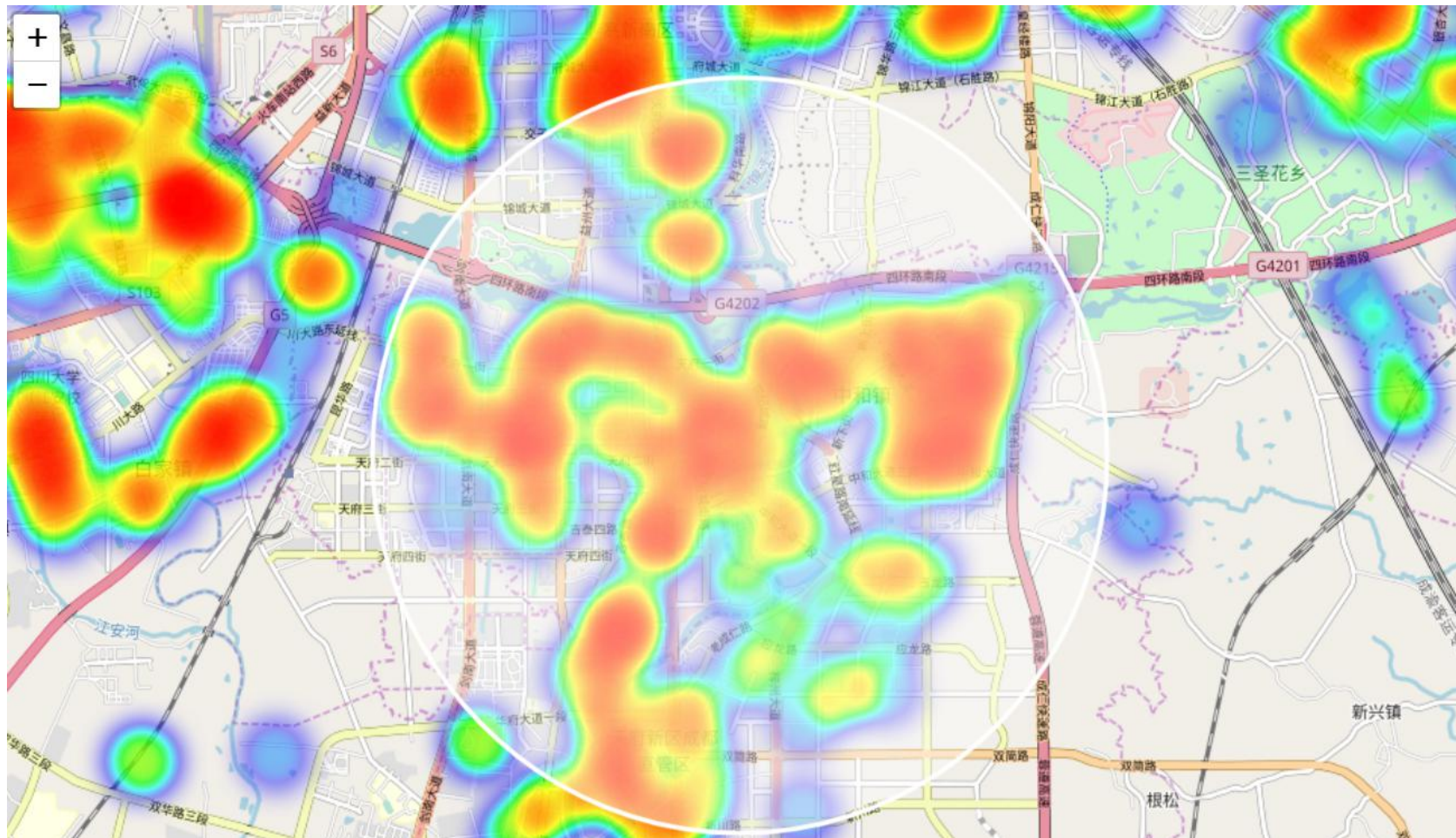
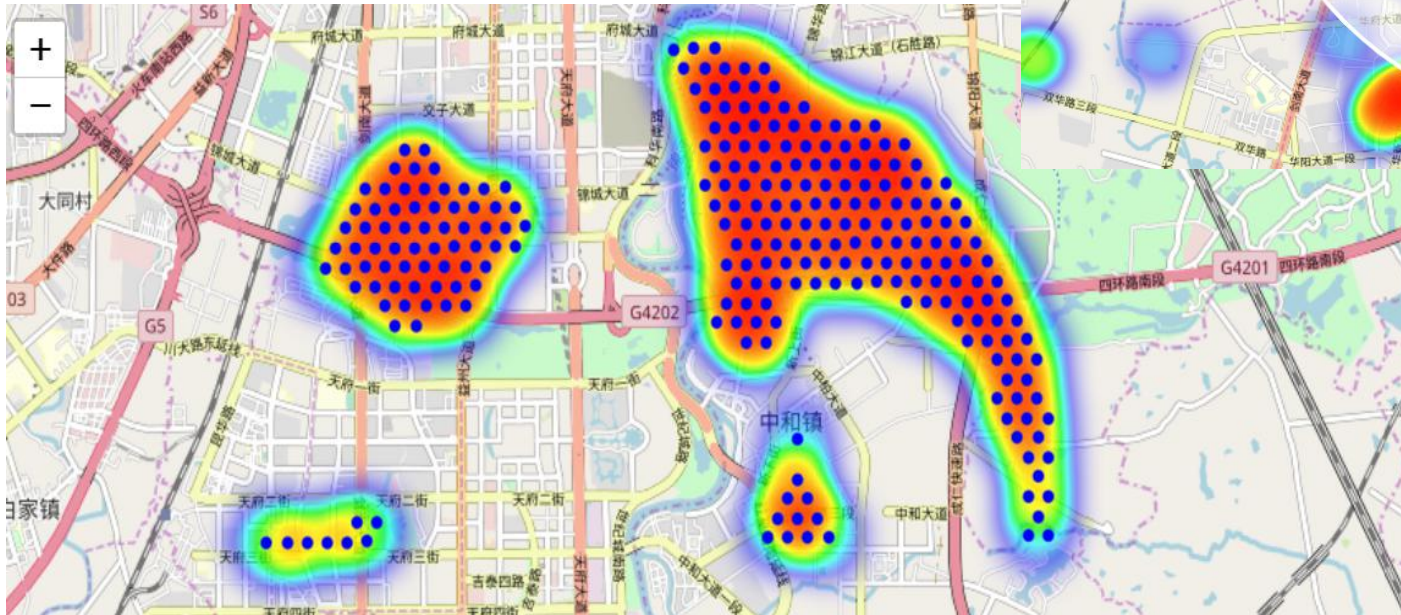
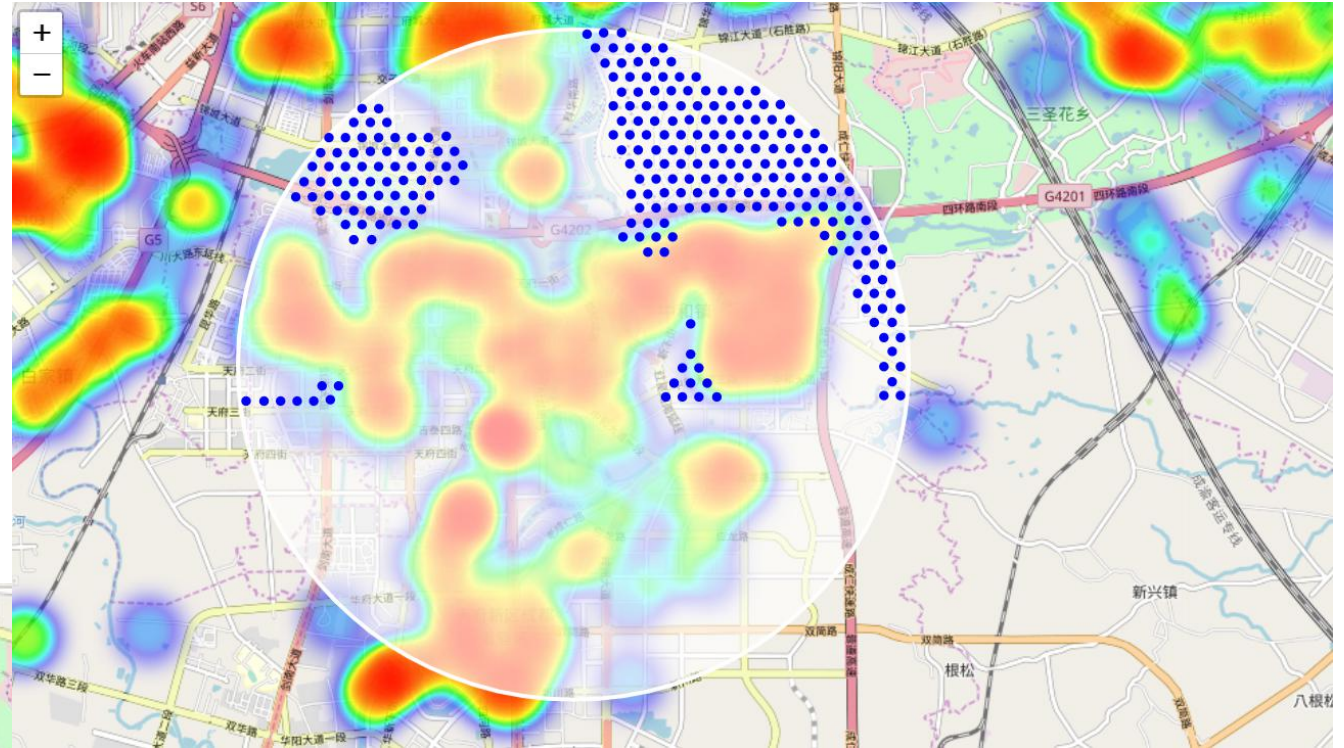


Fig:heat map of hot pot restaurant

select : more narrow region of interest, which will include low-restaurant-count parts of South high-tech zone

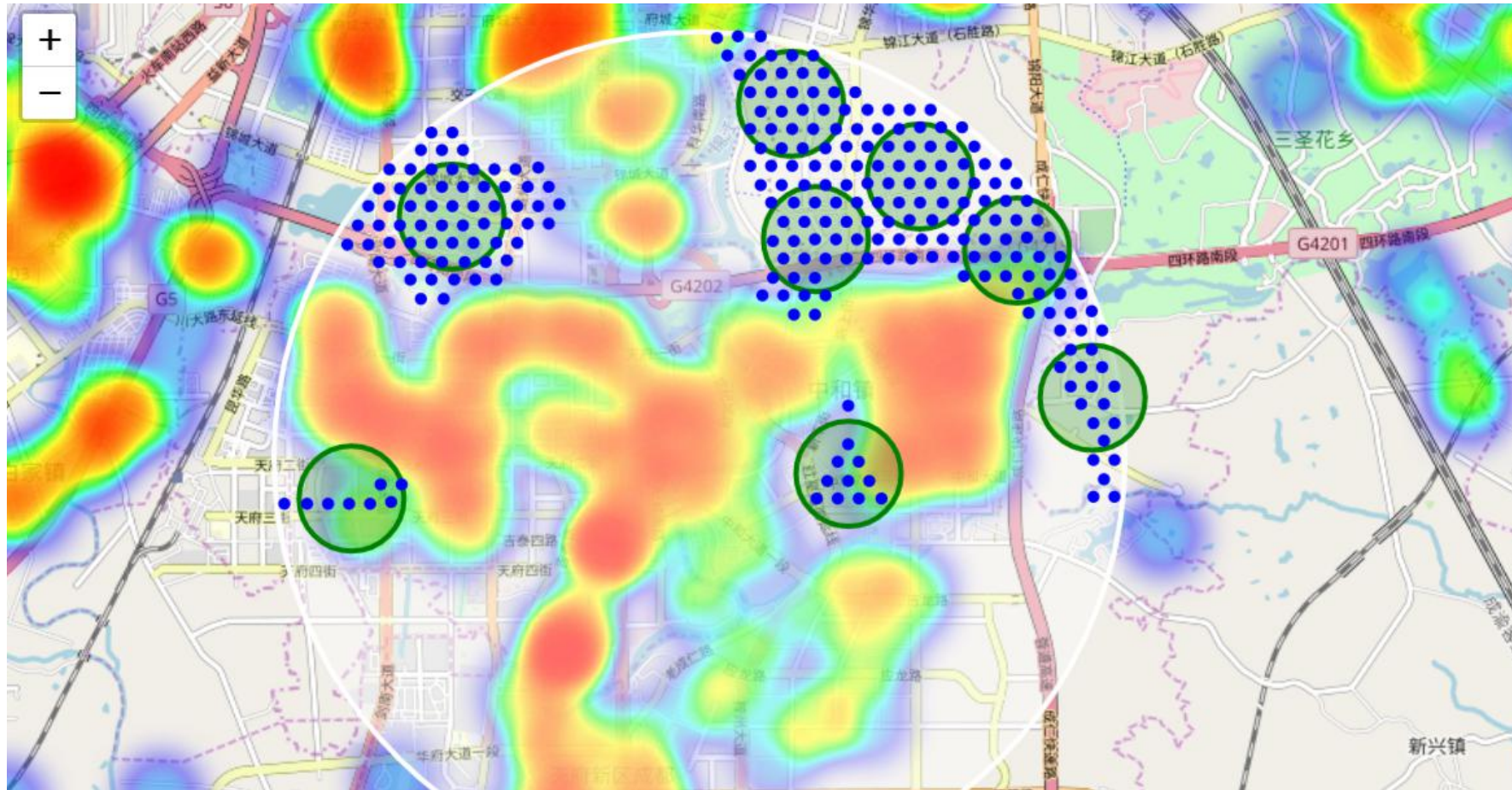


create new, more dense grid of location candidates restricted to our new region of interest (let's make our location candidates 200m apart).

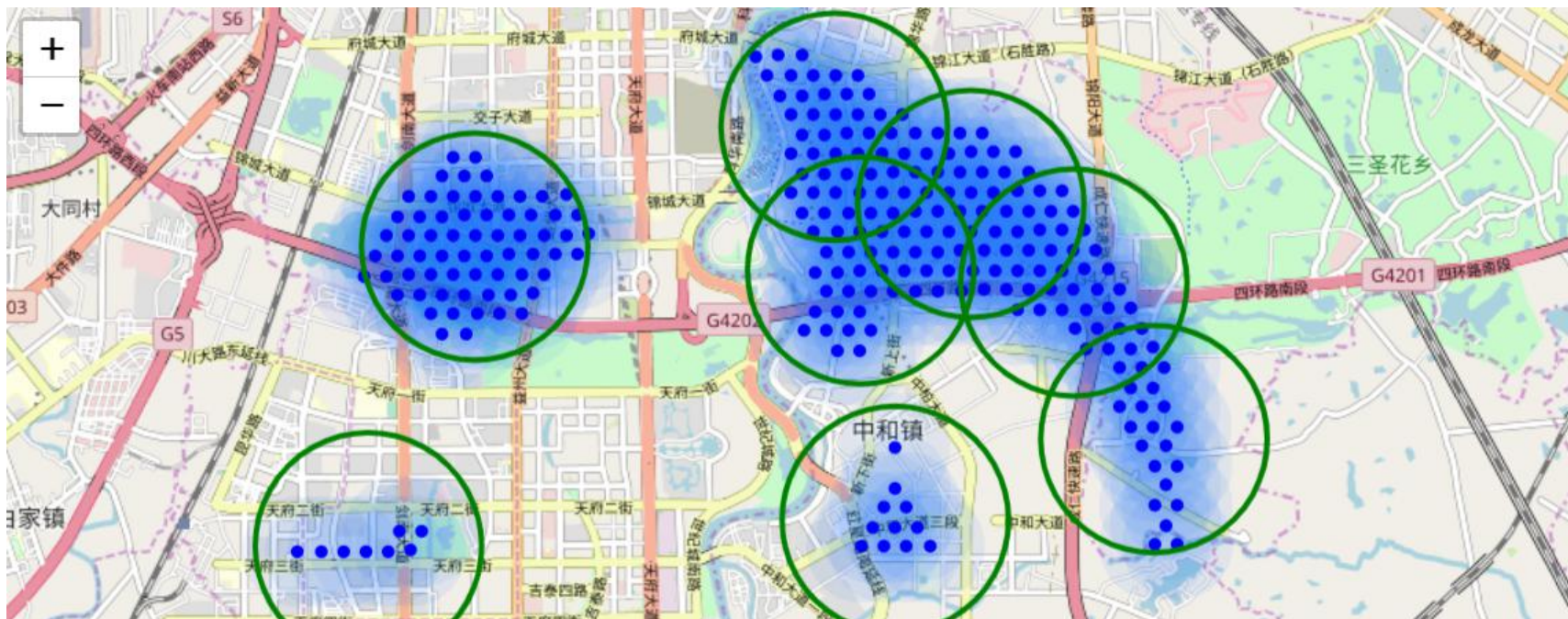


filter those locations: we're interested only in locations with no more than 5 restaurants in radius of 500 meters, and no Italian restaurants in radius of 1000 meters

cluster those locations to create centers of zones containing good locations. Those zones, their centers and addresses will be the final result of our analysis.



Let's see those zones on a city map without heatmap, using shaded areas to indicate our clusters:

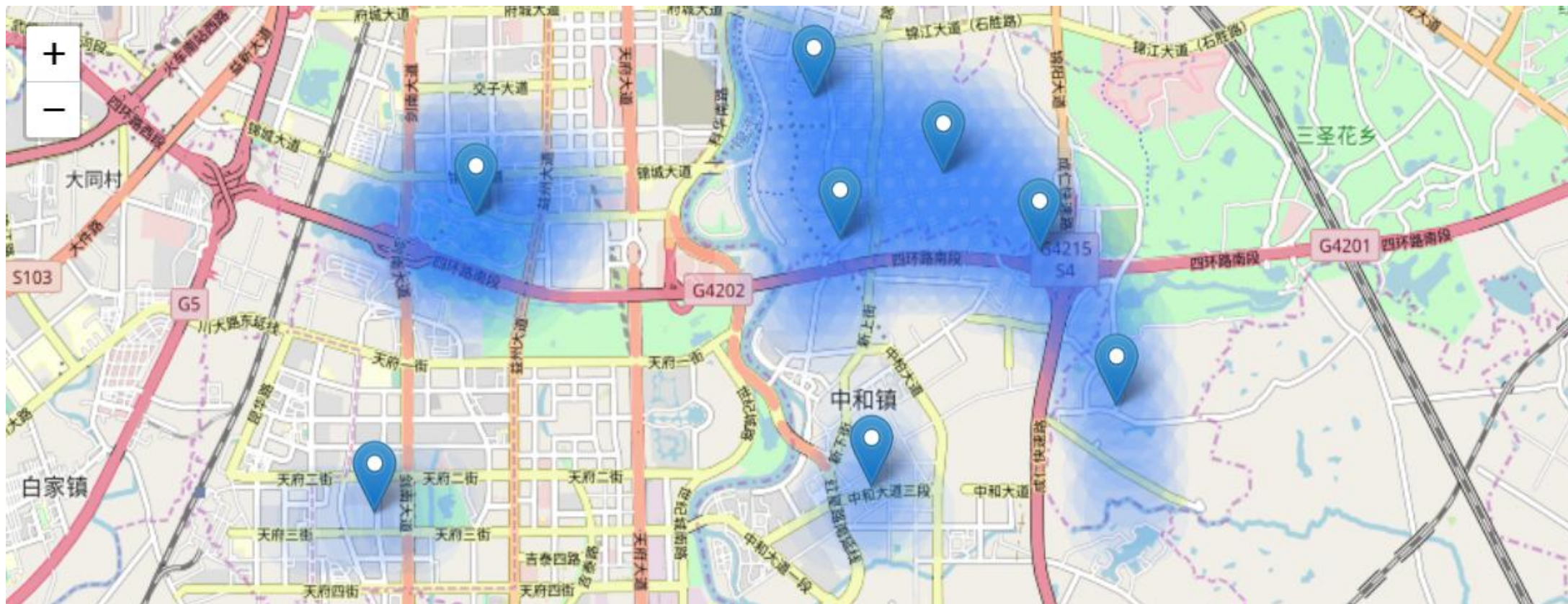


Addresses of centers of areas recommended for further analysis

四川省成都市武侯区锦悦西路
四川省成都市锦江区康达路
四川省成都市锦江区
四川省成都市锦江区疏新路
四川省成都市武侯区荣华南路
四川省成都市双流区中和大道62号
四川省成都市锦江区G4202(成都绕城高速)
四川省成都市双流区江家立交

=> 9.8km from TianFuSquare
=> 9.9km from TianFuSquare
=> 8.9km from TianFuSquare
=> 12.4km from TianFuSquare
=> 12.6km from TianFuSquare
=> 12.4km from TianFuSquare
=> 10.2km from TianFuSquare
=> 10.9km from TianFuSquare

We have created 8 addresses representing centers of zones containin`g locations with low number of restaurants and no Hot Pot restaurants nearby, all zones being fairly close to high-tech district center





Conclusion

Purpose of this project was to identify ChengDu areas close to center with low number of restaurants (particularly Hot Pot restaurants) in order to aid stakeholders in narrowing down the search for optimal location for a new Hot Pot restaurant. By calculating restaurant density distribution from BaiDu data we have first identified general boroughs that justify further analysis (high-tech district), and then generated extensive collection of locations which satisfy some basic requirements regarding existing nearby restaurants. Clustering of those locations was then performed in order to create major zones of interest (containing greatest number of potential locations) and addresses of those zone centers were created to be used as starting points for final exploration by stakeholders.

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 attractiveness of each location (proximity to park or water), levels of noise / proximity to major roads, real estate availability, prices, social and economic dynamics of every neighborhood etc.



THANK YOU

