

Shanghai Apartment Rental Price Modeling using GWR and Hedonic Model

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Background

Shanghai is one of the internationalized metropolis as well as the financial center in China. It is also the second most populous city worldwide, with a population of 26.3 million.

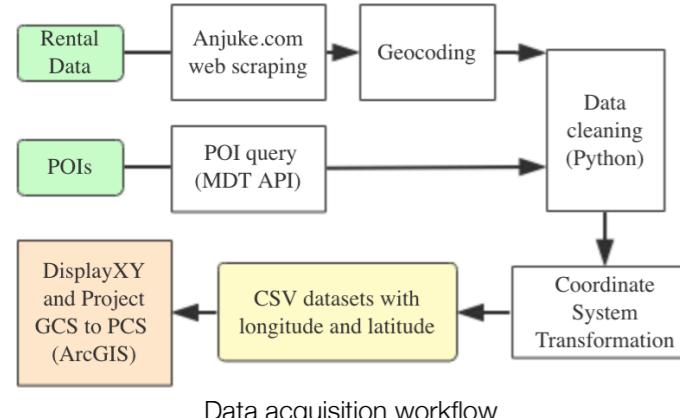


This project aims at modeling the rental price spatially and exploring the most influential factors of apartment rental price in Shanghai.

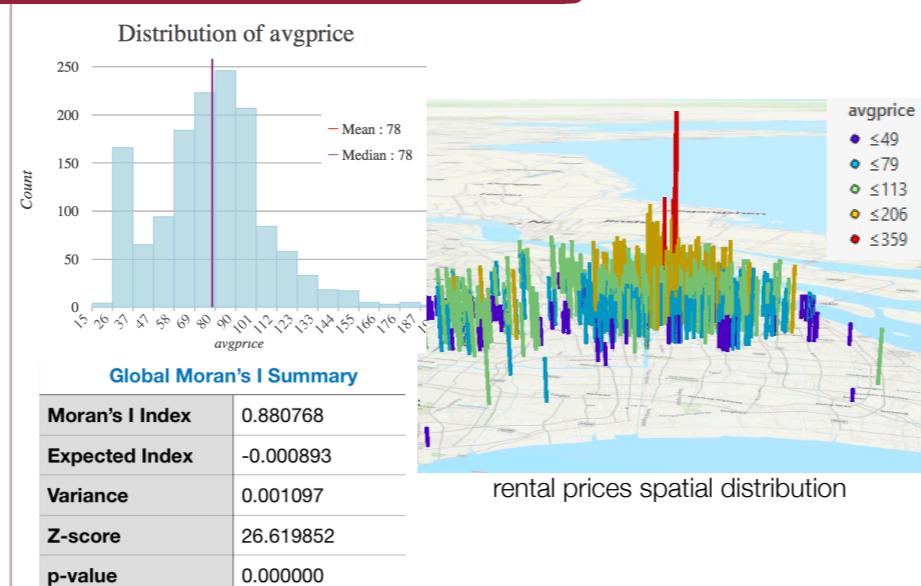
Data Acquisition

This is an open source data based analysis.

- Rental apartment information was acquired from web scraping the anjuke.com
- POI datasets of rental price influential factors were from location query API provided by Shanghai Metrodata Technology Co.



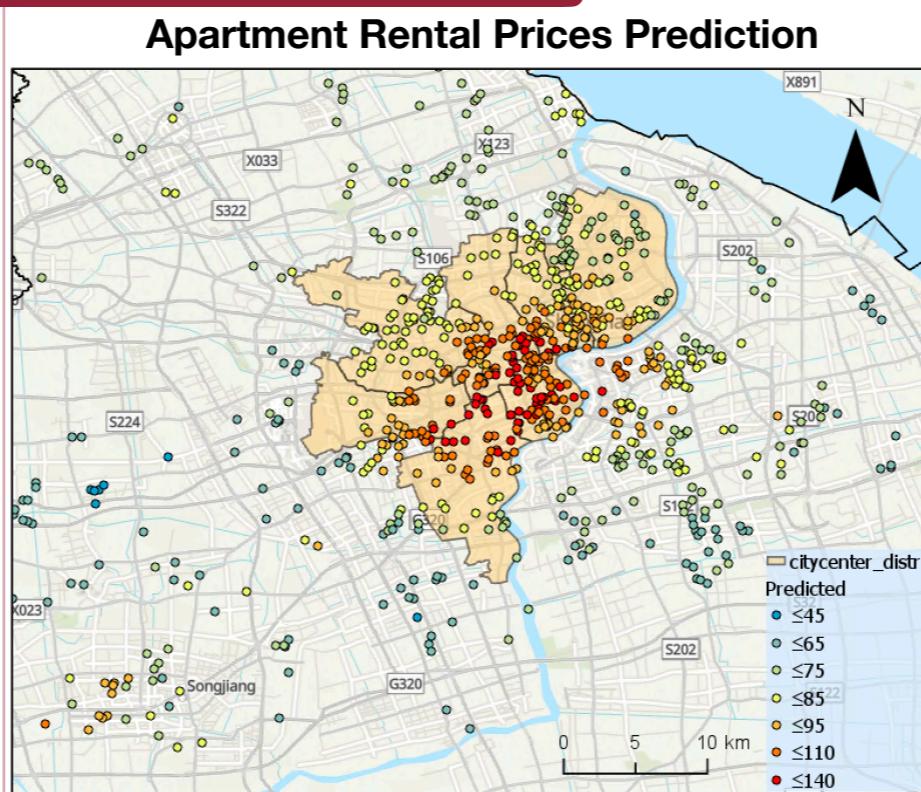
Rental Price Distribution



Hedonic Model Criteria

Accessibility Attribute	Distance to Park Distance to Mall Distance to Hospital Distance to Subway Station Distance to Bus Station
Neighborhood Attribute	Number of Financial Co in 1.5km, 3km Number of Information Co in 1.5km, 5km Number of Technology Co in 3km, 5km Number of Colleges in 3km Number of Hospitals in 3km
Structural Attribute	Apartment Building Type

GWR Model



Discussion

- After trying several exploratory variable combinations, I got the best fitted GWR model with the criteria above. $R^2 = 0.46$.
- The accessibility to job opportunities is the overall most influential factor of rental prices.
- More factors should be considered for a preciser price prediction model for Shanghai.

References

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