

The background image is a high-angle, wide shot of a modern apartment interior. The room is filled with natural light from large floor-to-ceiling windows that offer a panoramic view of a city skyline. The furniture includes a light-colored sofa, a low coffee table, and several modern chairs. The overall aesthetic is clean, minimalist, and bright.

Clustering New York Rental Listings

Dexter Sealy
METIS, March 3, 2017

Objective

What can we learn from performing cluster analysis on NYC rental listings?

- Can we personalize the search experience by surfacing interesting / related listings?
- **RentHop** aggregates rental listings for New York, Boston, Chicago, and other large cities
- Kaggle data set contains 50,000 New York listings created April through June 2016
- 2.9 million words (24K unique)



Tools and Approach



Data Cleaning

BEFORE

Loft like 12 ft CeilingsOversized,
energy efficient windowsGranite &
Porcelain gourmet KitchenPolished
chrome fixtures throughoutMinutes
from A,C,2,3,4,5,J,Z,R Trains!Minutes
from Wall St, Seaport, Stone St

Elevator / 24 Hr
DoormanFitness CenterGreat Roofdeck
for summerShoot Pool in Tenant's
LoungeImmaculately restored Lobby

To schedule a viewing please
call or text Justin @ 498-701-6489 or
email at kagglemanager@renthop.com

<p><a website_redacted

AFTER

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energy efficient windows Granite
Porcelain gourmet Kitchen Polished
chrome fixtures throughout Minutes
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JLine ZLine RLine Trains Minutes
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Tools and Approach



A rooftop terrace with wooden furniture and a large arched planter. The terrace is furnished with several wooden lounge chairs and tables, some with cushions. A large, dark, arched planter is visible in the background, containing various green plants. The terrace is bordered by a low wall with decorative spherical ornaments. In the background, there are multi-story buildings, suggesting an urban setting.

Demonstration

Conclusion

- Cluster analysis is effective
- Listings can be grouped in non-traditional ways

Future Work

- Include traditional data such as price, size and location
- Visualize algorithms side-by-side
- Build recommender





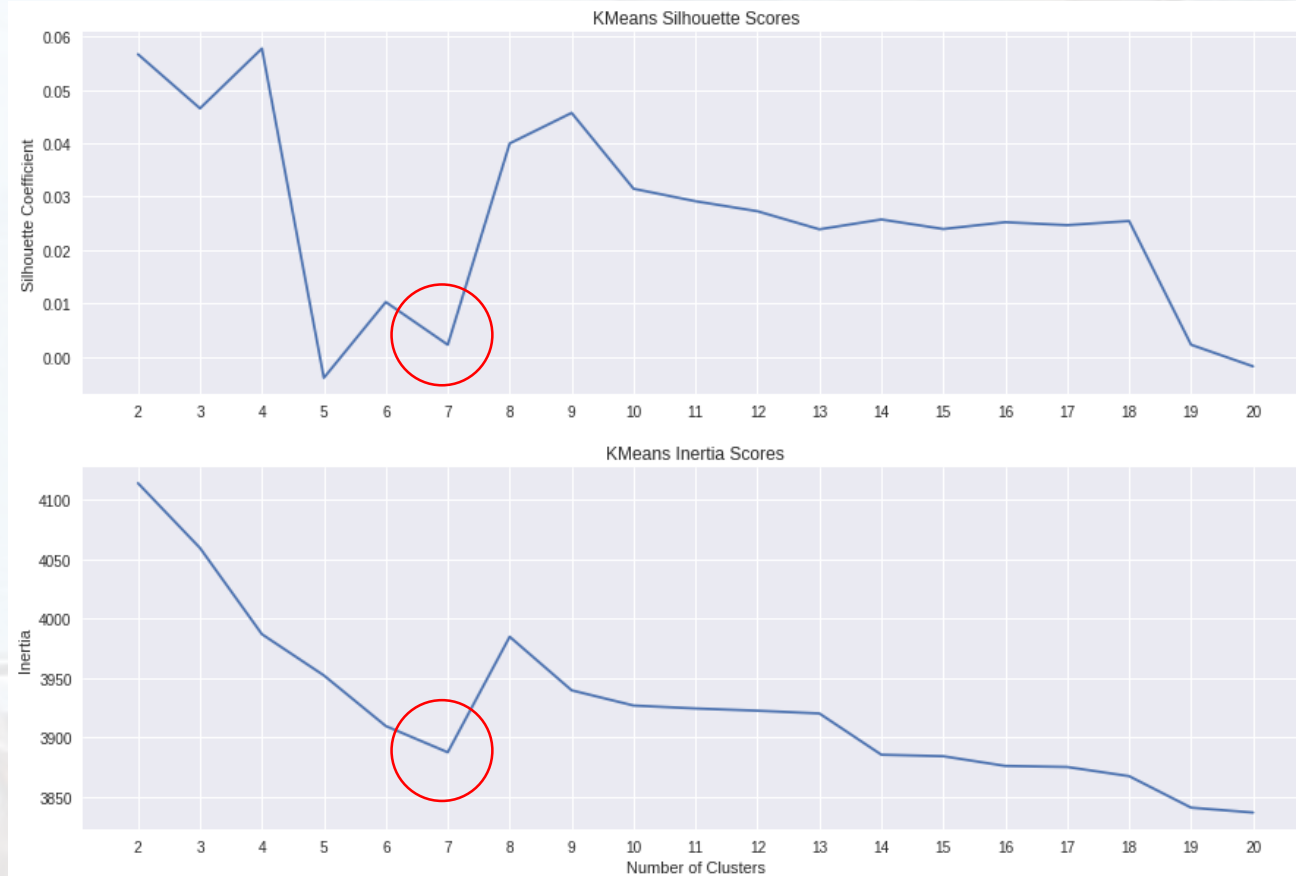
Questions?

Dexter Sealy

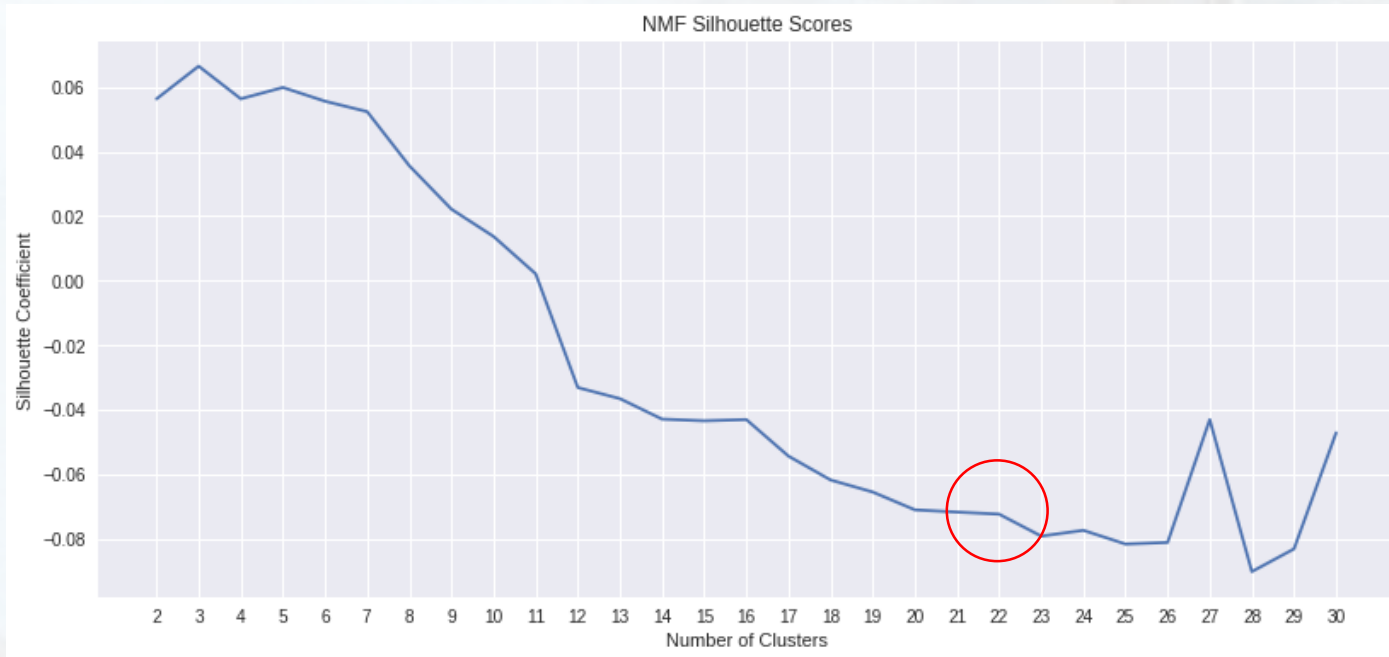
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KMeans Scores



NMF Scores



Ward Scores

