# Machine Learning for Real Estate Comps

Ben Jakubowski and Haonan Zhou 09/29/2016

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- The value of real estate units are often understood by examining sales of real estate comps (comparables).
- Comps are often identified based on a realtor's knowledge of recent sales in the neighborhood.
- Our objective is to apply machine learning to the problem of comps identification and the related problem of price prediction.



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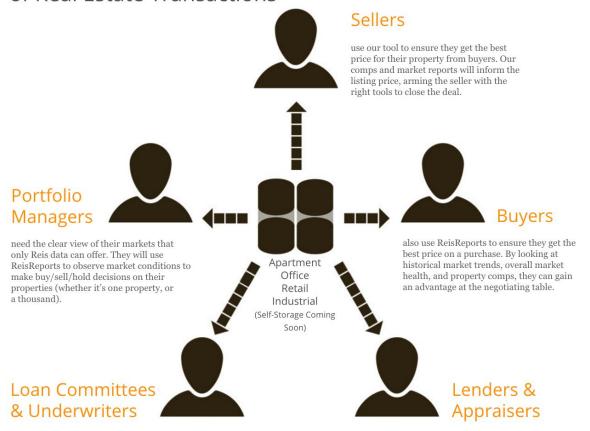








## Supporting every aspect of Real Estate Transactions



will use ReisReports to perform due diligence to justify lending decisions in real estate transactions. When the data comes from Reis, they know they can trust it to be unbiased and objective. use our reports to assist in loan qualification. By looking at current market conditions, comparable properties, caps rates, vacancy rates, and new construction, they can determine the value (and risk) of the property in question.



All Topics

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# All About Comps

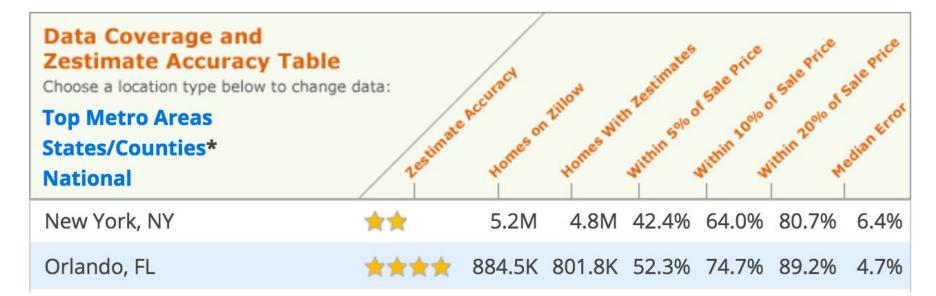
Buy

At some point during a home buying or selling experience, you will come face-to-face with comps.

Comps, or comparables, are regarded as the single-best tool in determining a home's value. They contrast criteria from recently-sold properties in a neighborhood, such as sale price, age of house, size, and square footage. Real estate agents use comps to prepare a Comparative Market Analysis (CMA) for their clients. Zillow also identifies nearby similar sales of homes and uses that information to help calculate the Zestimate for homes.

#### Similar recently-sold homes on Zillow

Every address has a set of nearby recently sold homes. Since these homes might not exactly match yours, we make adjustments for any differences when we calculate the Zestimate. For example, there might be a recently-sold home nearby just like yours, but it has one more bedroom. Therefore, that house would probably be valued higher; we adjust for this in computing your home's Zestimate. Ditto for the square footage, etc.



#### **Definitions**

#### **ZESTIMATE ACCURACY/STAR RATING:**

This rating is tied to the Median Error in an area. The ratings are as follows:

\*\*\* = Best Zestimate

\*\*\* = Good Zestimate

🜟 = Fair Zestimate

= Tax assessor's value, or unable to compute Zestimate accuracy

0 stars = No valuation

## **Data Sets**



#### **PLUTO™**

Extensive land use and geographic data at the tax lot level in commaseparated values (CSV) file format. The PLUTO files contain more than seventy fields derived from data maintained by city agencies.

**Release.....** 16v1

Date of Data..... February 2016 - March 2016

Data Dictionary



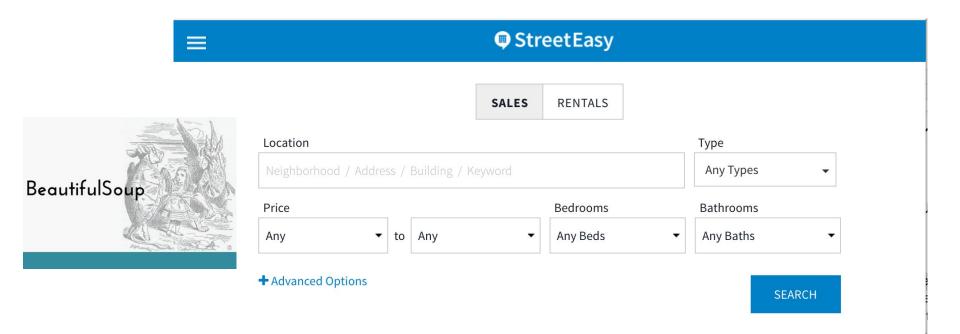
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Metadata / File Layout



## **Data Sets**



## **Data Analysis Objectives and Questions**

 Step 1- Comparing Neighborhoods: Given features about residential properties, which neighborhoods are similar? Do units in these neighborhoods have similar sale prices? If not, what new features might explain discrepancies?

## **Data Analysis Objectives and Questions**

- Step 1- Comparing Neighborhoods: Given features about residential properties, which neighborhoods are similar? Do units in these neighborhoods have similar sale prices? If not, what explains discrepancies?
- Step 2- Regression: Using an expanded feature set, use various regression algorithms to predict the sale price of a residential property.

Competition Details » Get the Data » Make a submission

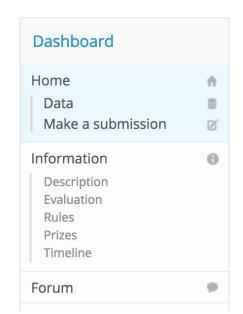


**Knowledge • 609 teams** 

### **House Prices: Advanced Regression Techniques**

Tue 30 Aug 2016

Wed 1 Mar 2017 (5 months to go)



Sold! How do home features add up to its price tag?



# **Questions?**