Methods Comparison in Hedonic Pricing Estimation for DC Housing

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README FILE

Project Title:

Methods Comparison in Hedonic Pricing Estimation for DC Housing

Synopsis/Overview:

This research project will compare the different the different methods of estimation learned in this semester's course. The estimation to be performed is on the housing sale prices of residential property within Washington DC. The compared methods will include: Random forests, Decision trees, and OLS regression.

Usage:

This research project will serve as an addition to the statistical toolkit of researchers planning to use a hedonic pricing model for home values. Selection of suitable method for estimating housing prices is equal as important as model specification or even the underlying theory of a research project. Using the Integrated Tax-assessment Public Extract (ITSPE),a housing price estimation model will be learned using an 85% training set of the underlying dataset. From this training set, this project will estimate housing price of the remaining 15% test set and compare the root-MSE (root mean-squared error) of the three methods under consideration. This contribution of my project will allow future researcher insight into the different methods available for hedonic pricing, as well as display the optimal method in an R markdown file.

Data:

ITSPE (Integrated Tax-assessment Public Extract) dataset from: http://opendata.dc.gov/datasets/integrated-tax-system-public-extract-facts (http://opendata.dc.gov/datasets/integrated-tax-system-public-extract-facts)

Progress log:

- Retrieval of dataset
- Cleaning and parsing of dataset to residential-only observations
- Review of Course lecture codes on different methods
- Adaptation of lecture codes to hedonic pricing model
- Model for each method is based on:

  saleprice ~ sale_num + nbhd + quad + usecode + eyb + num_units +
  landarea + livingarea + rooms + bedrm + bathrm + hf_bathrm +
  kitchens + fireplaces + lot_type + heater + AC + style +
  struct_type + grade + condtn + extwall + intwall + roofing

Contributors:

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