Emalytics Phase 0

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ABSTRACT

In this project we are going to explore the impact on property rental prices from property amenities, crime rates, and location.

1. OVERVIEW

We are going to explore the relationships between real estate rental pricing in a single city as it relates to property attributes, community features and amenities, proximity to interesting locations, and crime rates.

Our domain will involve U.S. residential addresses, property attributes such as number of bedrooms, bathrooms, square footage, latitude and longitude. We will identify interesting locations such as airports, schools, hospitals, police and fire stations, subway stops, museums, restaurants. We will include neighborhood crime rates.

- Predict the expected rental cost for a given property
  - Provide a price discovery mechanism for landlords to set a fair market price
  - Provide a price expectation mechanism for renters to expect a fair market price based on desired property attributes and location
- Determine the impact of proximity of types of interesting locations to rental pricing
- Determine the impact of crime on rental pricing

2. DESIGN CONSIDERATIONS

- Collect data set
  - Scrape realtor.com for property information for target city
  - Scrape yelp.com for interesting locations such as restaurants, spas, etc
  - Manually obtain interesting municipal locations such as hospitals, police stations, fire stations, etc.
  - Scrape (if possible) or manually obtain crime rate information
- Clean and Import data set into Postgresql database instance
- Big Data Analysis
  - Use Rattle/R to explore the data set, visualize it, and identify a pricing model based on it.
- Application Development
  - Apply the pricing model developed by Rattle/R to new rental properties

3. ARCHITECTURE

TBD

4. IMPLEMENTATION

TBD

5. LESSONS LEARNED

TBD

6. CURRENT STATUS AND FUTURE WORK

TBD

6.1 Tables, Figures, and Citations/References

TBD

7. REFERENCES