

# Kijiji Rental Pricing

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## I. INTRODUCTION

This report encapsulates the findings of our analytical project aimed at demystifying the rental price landscape in Toronto. The study utilized a dataset extracted from Kijiji, comprising over 4,100 property listings, which was meticulously curated to a refined set of 2,405 listings post-data cleaning. This analysis seeks to identify the relationship between rental property features and their corresponding market prices, enabling stakeholders to decipher the underlying price structures in the rental housing market.

## II. BUSINESS OBJECTIVES

Our primary objective was to harness predictive analytics to illuminate the determinants of rental pricing, thereby aiding stakeholders in making well-informed decisions. Real estate professionals, investors, and tenants stand to benefit from insights that not only pinpoint investment prospects but also optimize rental pricing strategies. The predictive model serves as a strategic tool in anticipating market trends, aligning rental offerings with market expectations, and ultimately driving economic advantage in a competitive marketplace.

### *Methodology*

The project leveraged an exhaustive data preparation phase where incomplete - null entries were cleaned out, resulting in a robust dataset that became the foundation of our analysis. Through exploratory data analysis, we discerned patterns and relationships that guided the selection of features relevant to rental pricing.

We employed three predictive models – Linear Regression, Decision Trees, and Random Forest – each offering a unique approach to decipher the pricing structure. Linear Regression helped in understanding the linear relationships, while Decision Trees provided a hierarchical view of decision points. However, it was the Random Forest model that stood out for its ensemble approach, enhancing prediction accuracy by mitigating overfitting risks associated with Decision Trees.

## III. RESULTS

The analytical journey provided several interesting insights. Bedroom count and living space, quantified by square footage, emerged as leading indicators of rental prices, aligning with market intuition that larger and more accommodative properties command higher

prices. The Random Forest model, with its intricate handling of variable interactions, achieved the highest accuracy. It highlighted the relative importance of features with 'Bedrooms' and 'Size (sqft)' collectively holding substantial predictive weight.

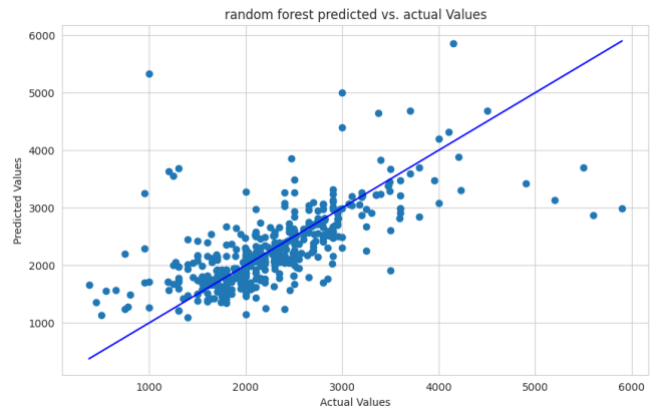


Fig 1. Random Forest Model

Visual analytics, including a Correlation Heatmap, underscored the positive correlation between these features and rental prices. A Feature Importance chart derived from the Random Forest model validated the significant impact of bedroom count and size on rental pricing, suggesting a focus area for stakeholders looking to evaluate property value.

### *Implications for Stakeholders*

The implications of our findings are multifold. Property managers can now better gauge rental price points, adjusting their portfolios to meet demand patterns. Investors gain clarity on which property features to prioritize for maximum returns, while renters are equipped with knowledge that can aid in negotiating fair rental prices in accordance with the current market value of similar properties.

## IV. CONCLUSION

In summary, our project illustrates the potency of data-driven insights in the realm of real estate. The analysis not only reaffirms the value of certain property attributes but also illuminates the predictive capability of machine learning models. Stakeholders can leverage these insights to navigate the rental market maze with a newfound level of precision and foresight, ultimately fostering a more dynamic and responsive real estate environment in Toronto.