House Market Prices Predicting With Machine Learning

# Introduction

The global housing market was one of the biggest financial markets in the world. It is the main criteria for any individual or business. Anyone wants to buy a home, and any companies need to have office space.

Individuals always required to buy a house for their needs. Everyone thinks to need to have every comfort like a place, construction, bed-rooms, approvals at the correct price.

### Problem

Rather than other markets, housing markets are highly volatile sometimes, and people will pay to overprice for a house that not needed. Even non-popular will be overpriced rather than the central cities. If buyers think to look at previous prices before what they about to buy, they astounded.

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The above statistics show that the rural area has the highest price per sqft than other cities(like Bangalore, Mumbai). What factors were derived? Realtors were made these prices too high to gain profits even not much worth it.

### Hypothesis

Upon looking at these factors, if previous data has analysed, can we overcome these dead traps? Any Machine Learning model will help to predict the price if a user has mentioned certain features.

The total aim of the project will be able to help in buying the right home at the right price. For this project to succeed, specific techniques Machine Learning or Neural Networks used.

### Mind Map

## Progress To Date

### Analysis

**Which cities will spend a high average on housing**

To Identify the above question. Two main tasks needed are needed. Identifying main cities in India and average spends on the housing market.

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India is the seventh-largest country in the world, Rather than Identifying the most spending housing areas. Another way is identifying main cities average spending will reveal which city spending most on real estate.

Agra, Chennai and Secunderabad commonly had IT industry, connecting highways across the country, and the cost of living here is very low compared to other cities.

**Which city was constructing real estate more rapidly**

Several factors needed to develop urban areas. Real estate plays a significant role in that. People across different parts of India will come to cities, finding for work & live here.

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Mumbai, Kolkata, Chennai, & Jaipur was rapidly developing on real estate. Mumbai, Kolkata, Chennai are coastal areas and most developed crowdsourced areas well. So that factors have influencing real estate development. The Prime minister has announced a high-speed railway and Delhi to Mumbai express highway connecting through Jaipur. These factors have influenced real estate to grow.

**How many bedrooms most people prefer**

Everyone will think before buying a home. How spacious it is and how many bedrooms are there, and many features are cross-checked before buying.

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Applying analysis on BHK Distribution percentage. Three bedrooms have 44.9%, two bedrooms have 37.8%, Four bedrooms has 9.8%, and One bedroom 5.1%. Most Middle-income person can mostly afford 2 or 3 bedrooms. So most housing categories mainly focus on two or three bedrooms. Upper and upper-middle-income groups can afford four and above.

**Did Who posted will influence the price.**

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Considering the data, the Owner has posted more amount than the dealer or builder. On contradictory Owner has posted more SQFT than the builder or dealer. This concludes that the Owner owns more land and sells, coming to dealer/builder, dividing the land, building more houses, and selling at the profit margin.

**What is machine learning**?

Machine learning first started in 1959 by Arthur Samuel, who worked in IBM and the pioneer field of computer gaming and artificial intelligence.

Diagram

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Machine learning a mixed field of statistics, computer programming, mathematics analysis. Machine learning has involved in various fields like medicine, computer vision, spam filtering, voice recognitions.

For learning the data, machine learning uses these standard practices.

* Supervised Learning
* Unsupervised Learning
* Semi-Supervised Learning
* Reinforcement Learning
* Dimensionality Reduction

**Regression**

For this project, it is best suitable for regression techniques. Regression is a method used in finance, investing. There are several regression techniques are there.

* Multiple linear regression
* Logistic Regression
* Support Vector Regression
* Random Forest Regression

In Regression, independent variables add random weights to predict the dependent variable by using the gradient descent technique to optimise weight for predicting accurately.

By applying these techniques and error-correcting methods, able to predict the prices that suitable for a house with that features.