First Estimator

House prices prediction model by Maria | Apostolis | Nikos

WHY?- Why did we develop the ML model?

Empowering a real estate company to make better, faster pricing decisions.

- The real estate market is competitive and accurate **pricing** is crucial for **success**.

- Brokers need a reliable **starting point** to estimate house prices quickly and effectively.

- A machine learning model would be a solution that **saves a lot of time**, since it can predict a **first estimation** of each house's price.

HOW?- How Did We Approach This?

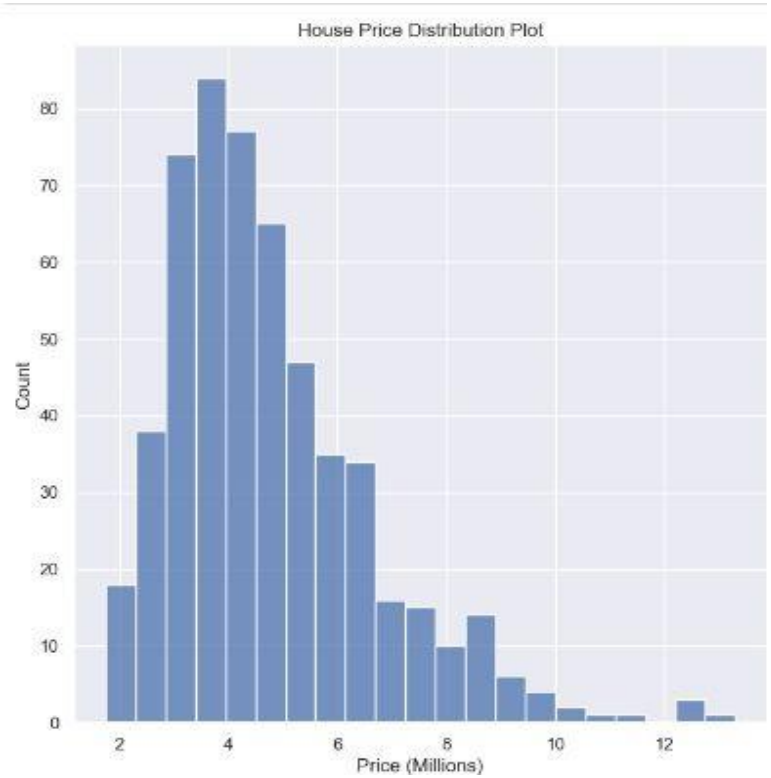
We built a model based on the features brokers consider important.

- **Understanding the Data**: Analyzed the dataset provided by brokers, focusing on key features influencing house prices (e.g., number of bedrooms, size).

- **Model Development:**
  - We analyzed relationships between these **features** and historical house **prices**.
  - Built a predictive system to estimate prices based on **new inputs**.

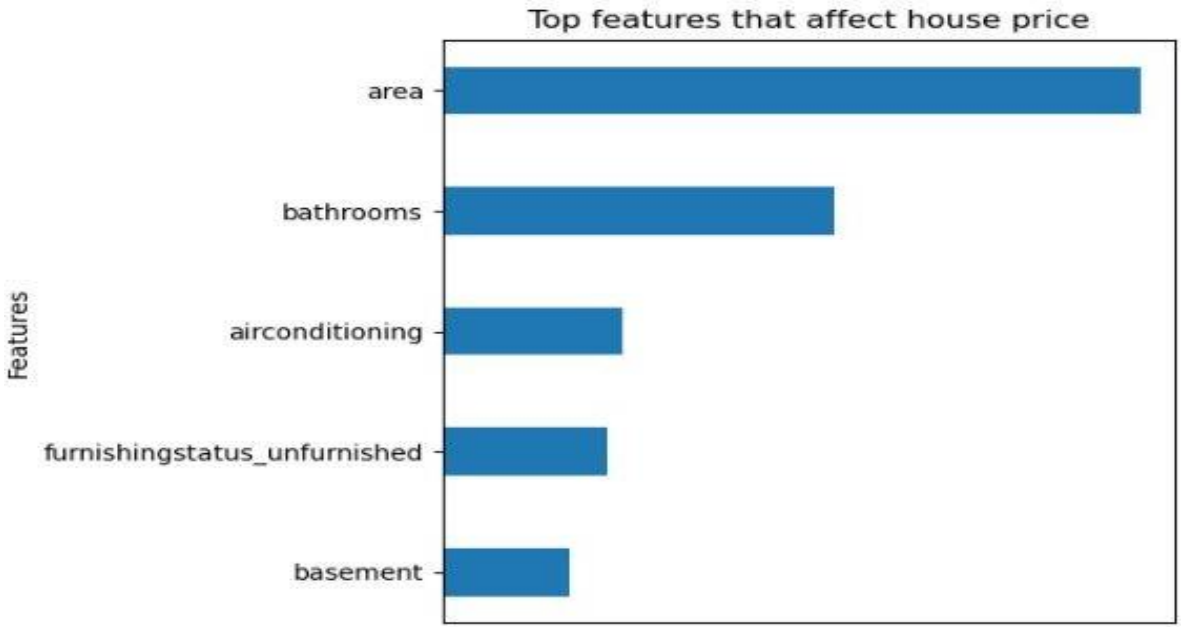
- **Evaluation**: Tested the model to ensure the estimates **align** closely with real market prices.

HOW?-Some graphs for better understanding



HOW - What Features Are Considered in the Model?

Features brokers should prioritize in pricing decisions.



HOW - How Does the Model Work?

Turning raw data into actionable insights.

1. The **broker inputs a house's features** into the model.
2. The model analyzes these features based on patterns it learned from historical data.
3. The model provides a **price estimate**, acting as a **starting point** for brokers.

Features → **Model analyzing..** → **Price Estimation**

WHAT?- What did we achieve?

- A tool that delivers **first price estimations,** with an **R^2 of 0.66** and **MAPE of 0.18**.
- The model can predict house prices within a **reasonable range** of market values.
- It **complements brokers' expertise** by offering a consistent, data-backed starting price.
- **Time Efficiency**: Provides quick estimates, reducing manual analysis.

Improving the Model

To make the model even better, we need more detailed data.

Additional data could improve accuracy:

- Neighborhood trends, such as upcoming developments
- Market conditions, like seasonality or demand shifts
- Crime rate
- Kitchen, garden, pool, fireplace, etc.
- Year built

Call to Action! Collaboration with the company to collect more features that will enhance our model.

Closing and Next Steps

Next Steps:

- Collaborate with the company to gather **more feature information and improve the performance of the model**.
- **Pilot** the tool in a selected region, gather **feedback** and improve.
- Explore how this tool can integrate into brokers' **workflows** seamlessly.

We’re excited to hear your feedback and work together to bring this tool to life!