



# House Rent Prediction System Using ML & DL

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#### INTRODUCTION

Apart from food and water, shelter is one of the most important need. The demand for rented houses is growing, due to an increase in the population. Among the population, there are people who make houses their investment and property yet most of the people buying the house for their livelihood and shelter. The rent for a house is dependent primarily on its furnishing, i.e. whether it's fully furnished, partially furnished or unfurnished. House prices are a major contributor to the national economy, as the highest percentage of a person's salary goes to renting a house for a living, people buy furniture for their houses, builders and contractors buy raw materials for building houses, and indirectly contribute to the national economy. It's a tedious and time-consuming task of collecting information about rents at different locations for major cities with hundreds of thousands of inhabitants. Hence, it's important to establish an automated and online easy to access system that can predict price accurately.

#### OBJECTIVES

The aim of this project is to build a model that can predict the rent of a house in the Mumbai region by providing an image of the interior of the house and the needs of the user in relation to the house. The purpose of the system is to provide users with reliable rental prices for housing, in accordance with this model. The aim of this project is to build a model that can predict the rent of a house in the Mumbai region by providing an image of the interior of the house and the needs of the user in relation to the house. The purpose of the system is to provide users with reliable rental prices for housing, in accordance with this model.

#### FEATURES

❖ User friendly environment :

The screenshot shows a web form titled 'HomeWiz'. It has three main sections: 'House Information' with fields for 'Select Location' (a dropdown menu), 'Enter BHK', 'No. of Bathrooms', and 'Carpet Area'; 'Amenities' with three dropdown menus for 'GYM', 'Swimming Pool', and 'Elevator'; and 'Images' with three file upload buttons labeled 'Upload Kitchen', 'Upload Living Room', and 'Upload Bedroom'. A blue 'Predict Price' button is at the bottom.

❖ Updated list of Locations in Mumbai:

This screenshot is similar to the previous one but shows the 'Select Location' dropdown menu populated with 'ACME ARARY GOREGAON EAST'. The 'Enter BHK' field contains '3', 'No. of Bathrooms' contains '2', and 'Carpet Area' contains '30'.

❖ Precise Prediction about House Rents in Mumbai:

This screenshot shows the results of the prediction. It displays 'Predicted Objects' with three boxes: 'Kitchen Image: 1 refrigerator', 'Hall Image: 3 couch, bed, tv', and 'Bedroom Image: 2 bed, clock'. Below this, it says 'Total furniture is: 6'. At the bottom, a box shows 'Predicted House Rent: ₹48929'.

#### TECHNOLOGY USED

❖ **FLASK** : Flask is a micro web framework written in Python. It in the input is classified as a microframework because it does not require particular tools or libraries. It has no database abstraction layer, form validation, or any other components.

❖ **PIXELLIB**: Pixellib is a Python library used for object detection and segmentation in images and videos. It offers pre-trained models for detecting common objects like cars, people, furniture, etc. In this model, Pixellib is used for detecting furniture images provided by the user.

❖ **PYTHON** : Python is a high-level, interpreted programming language that is widely used for web development, scientific computing, data analysis, artificial intelligence, and other applications. It has a simple syntax, large standard library, and active community of developers, making it a popular choice for both beginners and experienced programmers.

❖ **HTML5** :HTML5 is a markup language used for structuring and presenting content on the World Wide Web. HTML5 is the latest version of the markup language used to structure content for the web. It is designed to make it easier to include multimedia content, and introduces new elements and attributes.

❖ **CSS 3** : CSS describes how elements should be rendered on screen, on paper, in speech, or on other media.

❖ **Bootstrap** : Bootstrap is a free and open-source CSS framework directed at responsive, mobile-first front-end web development.

#### CONCLUSION

There are fluctuations in house prices, which is why the choice of price for a rental home is so important. This system aims to make it easier and more secure for them to obtain rent on their flat, apartment or house. It can therefore affect their choice in a positive way. This system is intended to avoid devious acts of fraud being carried out by contractors. In order to eliminate manual effort and time when looking for houses in the area of our description, it is very useful to use a prediction system based on machine learning.

#### FUTURE SCOPE

⌚ The future scope of this project includes expanding the dataset to include more recent and diverse data sources for better accuracy. The integration of natural language processing techniques for analysing the textual data associated with the property listings could further enhance the accuracy of the model. The inclusion of more advanced deep learning techniques for object detection and image segmentation could help to improve the furniture detection aspect of the model. In addition, integrating user feedback and reviews into the model could help to refine the prediction results and make them more personalized. In future, the system can be modified in such a way that enables the customers to rent their houses and integrate it with a payment gateway as well.

#### CONTACT

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#### REFERENCE

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