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## Summary

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These studies suggest that machine learning models such as RIPPER, XGBoost, Random Forest, and Gradient Boosting generally outperform other models in housing price prediction.



### Not a yes or no question

To use the Consensus Meter, try asking a simple yes or no question

**Try:** Are machine learning models effective for predicting housing prices?



## Copilot

Beta

10 papers analyzed

## Comparison of Machine Learning Models for Housing Price Prediction

Housing price prediction is a critical task in the real estate market, aiding stakeholders in making informed decisions. Various machine learning models have been employed to enhance the accuracy of these predictions. This synthesis compares the effectiveness of different machine learning algorithms in predicting housing prices based on multiple research studies.



## Key Insights

- **RIPPER Algorithm Performance:**
  - The RIPPER algorithm consistently outperforms other models like C4.5, Naive Bayesian, and AdaBoost in housing price prediction accuracy <sup>1</sup> .
- **XGBoost Superiority:**
  - XGBoost significantly outperforms traditional models like Multiple Linear Regression and other machine learning models such as K-Nearest Neighbors (KNN), Ridge Regression, and Random Forest in predicting housing prices <sup>2</sup> <sup>6</sup> <sup>9</sup> .
- **Random Forest and Gradient Boosting:**
  - Random Forest (RF) and Gradient Boosting Machine (GBM) show better performance compared to Support Vector Machine (SVM) in terms of predictive power and error metrics (MSE, RMSE, MAPE) <sup>3</sup> .
  - Random Forest and Gradient Boosting are effective in handling large datasets and complex feature interactions <sup>5</sup> <sup>6</sup> .
- **Combination of Data Pre-processing and Machine Learning:**
  - Combining data pre-processing techniques with machine learning algorithms improves the accuracy of housing price predictions <sup>4</sup> <sup>7</sup> .
- **LightGBM and Gradient Boosting:**
  - LightGBM, Gradient Boosting, and XGBoost are effective models for housing price prediction, with XGBoost often providing the best results in terms of RMSE <sup>6</sup> <sup>9</sup> .



- **Forest Neural Gradient Boosting Algorithm (FNGBA):**

- The FNGBA method shows high accuracy and low error rates compared to other models, indicating its potential for effective housing price prediction **8** .

### Conclusion

The synthesis of multiple research studies indicates that advanced machine learning models, particularly XGBoost, Random Forest, and Gradient Boosting, are highly effective for housing price prediction. The RIPPER algorithm also shows strong performance in specific datasets. Combining robust data pre-processing techniques with these models further enhances prediction accuracy. Overall, XGBoost emerges as a consistently superior model across various studies, suggesting its broad applicability and effectiveness in the domain of housing price prediction.

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#### Using machine learning algorithms for housing price prediction: The case of Fairfax County, Virginia housin... **1**

RIPPER algorithm consistently outperforms other machine learning models in housing price prediction performance.

Expert Syst. Appl.    Byeonghwa Park et al.    **262** citations  
2015

**Highly Cited**

**Study snapshot**





## Housing Price Prediction Using Machine Learning Algorithm

2

XGBoost model significantly outperforms the baseline in predicting housing prices, highlighting its efficacy in this domain.

Journal of World Economy   Ling Zhang et al.   0 citations  
2023

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## Predicting property prices with machine learning algorithms

3

RF and GBM achieve better predictive power in property price prediction compared to SVM, but SVM is still useful for data fitting.

Journal of Property Research   Winky K.O. Ho et al.  
85 citations   2021

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## Housing Price Prediction Model Using Machine Learning

4

The proposed machine learning-based house pricing prediction model significantly improves accuracy over existing techniques.

2023 International Conference on Sustainable Emerging...  
Aman Chaurasia et al.   0 citations   2023



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### Housing Price Prediction with Machine Learning

5

Machine learning algorithms like Linear Regression, Decision Tree, and Random Forest are used to predict housing prices, with various factors like location, area, and room number impacting the prediction methods.

International Journal of Innovative Technology and Exploring...  
Amena Begum et al. 3 citations 2022

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### Machine learning models for house price prediction

6

Machine learning models like regression tree, random forest, XGBoost, gradient boosting, and LightGBM are effective for predicting housing prices.

Applied and Computational Engineering L. Fang et al.  
0 citations 2023

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### Housing Price Prediction via Improved Machine Learning Techniques

7

This paper applies both traditional and advanced machine learning approaches to investigate the



differences in housing price prediction methods and provides an optimistic result.

Procedia Computer Science    Quang-Trung Truong et al.  
62 citations    2020

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### Predicting future housing prices: a machine learning approach 8

The Forest Neural Gradient Boosting Algorithm (FNGBA) provides the least mistake and maximum accuracy in predicting future housing prices compared to independent methods.

Multidisciplinary Science Journal    P. Verma et al.  
0 citations    2023

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### House price prediction based on machine learning 9

The XGBoost model is the best among LightGBM, Gradient Boosting, and XGBoost for house price prediction, with an RMSE of 0.02975, 0.02537, and 0.01364.

Applied and Computational Engineering    Hanwen Li et al.  
1 citations    2023

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## House Price Prediction Using Machine Learning Algorithms

10

Machine learning algorithms can accurately forecast house prices, with the impact of data like location, duration, and dimension on the accuracy of predictions.

International Journal for Research in Applied Science and...

Dr. Sonia Juneja et al. 0 citations 2023

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### Suggested searches

What are the most effective machine learning models for housing price prediction?



Comparison of machine learning algorithms for property price forecasting



How do different machine learning techniques perform in predicting housing prices?



## House Price Prediction Modeling Using Machine Learning

The proposed work uses decision tree classification, decision tree regression, and multiple linear regression for house price prediction in a small town in West Godavari district of Andhrapradesh.

International Journal of Information Engineering and Electroni...

M. Thamarai et al. 28 citations 2020



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### House Price Prediction Using Machine Learning

Lasso regression algorithm reliably outperforms other machine learning models in housing cost prediction due to its adaptable and probabilistic methodology.

International Journal of Innovative Technology and Exploring...

G. N. Satish et al. 1 citations 2019

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### House Price Prediction using Machine Learning Algorithm

The study implemented various machine learning algorithms like Linear Regression, Gradient Boosting Regressor, Histogram Gradient Boosting Regressor, and Random Forest Regressor for house price prediction.

2023 7th International Conference on Computing...

Shailendra Sharma et al. 1 citations 2023

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### House Price Prediction System using Machine Learning Algorithms and Visualization

The system uses various machine learning algorithms, including linear regression, decision tree regression, random forest regression, and artificial neural networks, to predict house prices with great accuracy.





2023 IEEE International Conference on Electronics, Computin...

M. S. Supriya et al. 0 citations 2023

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## HOUSE PRICE PREDICTION USING MACHINE LEARNING

Machine learning models like XG Boost, Support Vector Regression, and Machine Learning Lasso and Ridge regression can be used for housing price prediction.

International Research Journal of Modernization in Engineerin...

Deepanshu Patel et al. 6 citations 2023

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## House Price Prediction using Machine Learning Algorithms

Random forest provides better accuracy (about 89%) for housing price prediction compared to linear regression and polynomial regression.

International Journal on Recent and Innovation Trends in...

Angulakshmi M et al. 0 citations 2023

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## A Literature Review on Using Machine Learning Algorithm to Predict House Prices



Machine learning algorithms like call trees, supply regression, support vector regression, and Lasso Regression are used to forecast house prices.

International Research Journal on Advanced Science Hub

Tanmoy Dhar et al. 0 citations 2023

Literature Review

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### Prediction of House Prices Using Machine Learning

Machine learning techniques like SVR, KNN, SGB regression, CatBoost regression, and Random forest regression are used to predict house prices.

International Journal for Research in Applied Science and...

### Real Estate Price Prediction using Machine Learning

Different machine learning algorithms and data sets can significantly alter accuracy in housing price prediction, and the study suggests a best algorithm based on the available data.

2023 Third International Conference on Advances in Electrical,...

S. Sreeja et al. 0 citations 2023

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House Price Prediction using Machine Learning

Machine learning models can help customers purchase a suitable house by analyzing attributes like transportation facilities and desired features.

International Journal of Advanced Research in Science,...  
R. S. Patil et al.    0 citations    2021

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