



Bangalore House Price Predictor

A PropTech Initiative

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House Price Prediction Using Machine Learning

Based on IJRTI (2025) & IJRPR (2024) Research Papers

Transforming real estate valuation through data-driven insights and automated prediction systems

The Real Estate Challenge

Traditional Valuation

Manual processes prone to human error and subjective bias

Static Methods

Unable to adapt to rapidly changing market conditions

ML Solution

Automated, data-driven insights for accurate predictions

Machine learning revolutionizes property valuation by eliminating manual inefficiencies and providing real-time market insights.



Research Objectives



Accurate Valuation

Develop ML-based system for precise property price prediction using advanced algorithms



Key Factors

Identify influencing factors: location, size, amenities, and market trends



Stakeholder Support

Empower buyers, sellers, investors, and policymakers with data-driven decisions



Real-time Insights

Provide transparency, fairness, and instant predictions for stakeholders

Literature Review: IJRTI 2025

Early Models

- Linear Regression
- Multiple Linear Regression
- Basic statistical approaches

Advanced Methods

- Decision Trees
- Random Forests
- Gradient Boosting

Research emphasizes preprocessing, feature engineering, and evaluation metrics: RMSE, MAE, and R² for model performance assessment.



Literature Review: IJRPR 2024



1

Advanced Techniques

SVR, ANN, XGBoost, and sophisticated ensemble models



2

Deep Learning

Spatio-temporal analysis for housing trend prediction



3

Ethical AI

Addressing fairness, bias reduction, and model explainability

Focus on combining technical accuracy with social responsibility in AI-driven real estate solutions.



Methodology: IJRTI 2025

01

Data Collection

Real estate datasets, APIs, and CSV files

03

Feature Selection

Identify most relevant predictive variables

05

Evaluation

Assess performance using standard metrics

02

Preprocessing

Handle missing values, encoding, scaling, outlier detection

04

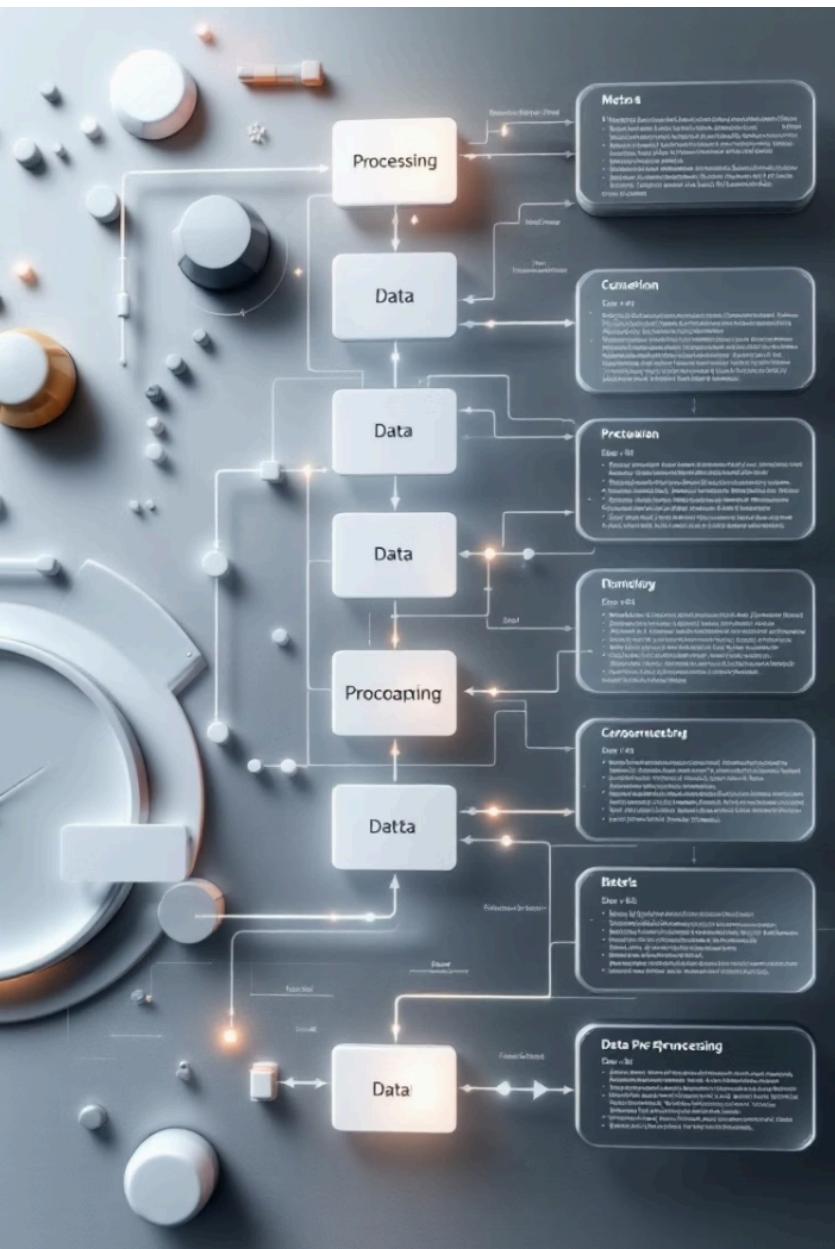
Model Training

Train algorithms on processed dataset

06

Deployment

Create user interface for predictions



Methodology: IJRPR 2024

Dataset

Real estate and synthetic data with 1,000 samples for comprehensive training

Advanced Preprocessing

KNN imputation, IQR outlier removal, and feature scaling techniques

Algorithm Suite

Random Forest, Gradient Boosting, XGBoost, Neural Networks

Optimization

Bayesian hyperparameter tuning for enhanced performance

Technology Stack



Programming

Python with pandas, NumPy,
scikit-learn, XGBoost,
TensorFlow/PyTorch



Backend

Flask/FastAPI for robust API
development



Frontend

HTML, CSS, Streamlit/Dash for
user interfaces



Visualization

Matplotlib, Seaborn for data insights



Deployment

APIs and cloud hosting solutions

Results & Performance

IJRTI 2025 Deliverables

- Functional web application
- Price prediction system
- Chatbot integration
- EMI calculator
- Agent contact features

85%

Random Forest

92%

XGBoost

89%

Gradient Boosting

98%

Neural Networks

Neural Networks achieved the highest accuracy (94-98%), demonstrating superior performance over traditional regression methods.

Future of Real Estate Valuation

1 Current Achievement

ML transforms real estate valuation with faster, reliable, scalable solutions

2 Research Focus

IJRTI emphasized implementation; IJRPR focused on optimization and ethical AI

3 Future Integration

Geospatial and economic data integration for enhanced accuracy

4 Global Expansion

Bias reduction, global market expansion, and continuous learning systems



Thank You

We appreciate your time, attention, and valuable feedback throughout this journey. Your insights have been instrumental in shaping our PropTech vision.

Team PropTech

Divyansh • Aryan • Hardik • Apurv • Himadri

Five passionate innovators united by a shared vision to transform the property technology landscape through creative solutions and collaborative excellence.

Faculty Guidance

Mr. Aditya Bangia

Our sincere gratitude to our faculty guide for his unwavering support, mentorship, and expertise that helped shape this project from concept to completion.

