PREDICTING HOUSE PRICES USING MACHINE LEARNING

• INTRODUCTION

With the introduction of the power of machine learning in predicting house prices using Python has revolutionized the real estate industry. In this article, we explore the dynamic world of house price prediction using cutting-edge machine-learning techniques. By harnessing the vast potential of data analysis, feature engineering, and model training in Python, we aim to provide a comprehensive guide that equips readers with the tools to make informed decisions in the ever-changing housing market.

• LINEAR REGRESSION

Linear regression is a mainly used technique for the prediction of house prices due to its simplicity and interpretability.

Linear regression provides insights into the impact of each feature on the house price, enabling us to understand the significance of different factors and make informed decisions in the real estate market.

• CODING WITH EXPLANATION

DATASET LINK:

HTTPS://WWW.KAGGLE.COM/DATASETS/VEDAVYASV/USA-HOUSING

 # IMPORT NECESSARY LIBRARIES

import pandas as pd

from sklearn.model_selection import train_test_split

from sklearn.preprocessing import StandardScaler

from sklearn.linear_model import LinearRegression

```
from sklearn.metrics import mean_squared_error, mean_absolute_error, r2_score

# Load the dataset

data = pd.read_csv("/kaggle/input/usa-housing/USA_Housing.csv")

# Data preprocessing

# Handle missing values, encode categorical variables, split the data into features and target variable


# Split data into features and target variable

X = data.drop('Price', axis=1)  # Features

y = data['Price']  # Target variable


# Split the data into training and testing sets

X_train, X_test, y_train, y_test = train_test_split(X, y, test_size=0.2, random_state=42)


# Choose a model and train the model

model = LinearRegression()  # Change the model as needed

model.fit(X_train, y_train)


# Make predictions

y_pred = model.predict(X_test)


# Evaluating the model

score = model.score(X_test, y_test)
```

```
print("Model R^2 Score:", score)
```

```
# Predicting the price of a house
```

```
user_input = pdd.DataFrame({'bedrooms': [2], 'bathrooms': [2.5], 'sqft_living': [600], 'sqft_lot': [600], 'floors': [2], 'zipcode': [98008]})
```

```
# Predict house prices
```

```
# Allow user input for house features and predict the price
```

```
predicted_price = model.predict(user_input)
```

```
print("Predicted Price:", predicted_price)
```

• Conclusion

In conclusion, using machine learning in Python is a powerful tool for predicting house prices. By gathering and cleaning data, visualizing patterns, and training and evaluating our models, we can make informed decisions in the dynamic world of real estate.

Thank you