

Report
On
House price prediction
Prepared by
Savan Bhatiya (18012011006)

Guided By
Prof. Ketan J. Sarvakar



B.Tech Semester VII

Nov-Dec -2021

Subject: Deep Learning
Subject code: 2CEIT78PE1

Department of Computer Engineering
U. V. Patel College of Engineering
Ganpat University, Ganpat Vidyanagar – 384012

Abstract:

House price prediction is an important topic of real estate. The literature attempts to derive useful knowledge from historical data of property markets. Deep learning techniques are applied to analyze historical property transactions in India to discover useful models for house buyers and sellers. Revealed is the high discrepancy between house prices in the most expensive and most affordable suburbs in the city . Moreover, experiments demonstrate that is based on mean squared error measurement is a competitive approach.

Introduction:

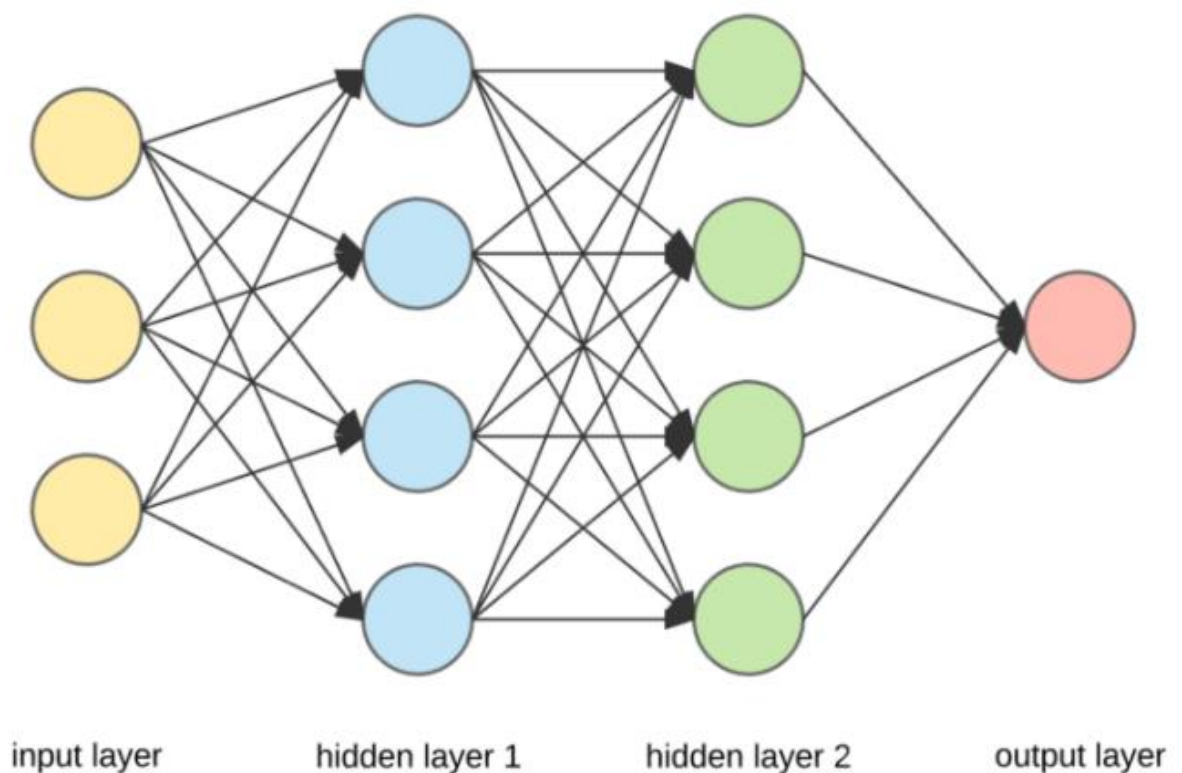
Having lived in India for so many years if there is one thing that I had been taking for granted, it's that housing and rental prices continue to rise. Since the housing crisis of 2008, housing prices have recovered remarkably well, especially in major housing markets. However, in the 4th quarter of 2016 In fact, median resale prices for condos and coops fell 6.3%, marking the first time there was a decline since Q1 of 2017. This project is about small house prediction.in this project we use house price dataset.

Tools and Libraries:

Sr no.	Tools & Libraries	Description
1	TensorFlow	TensorFlow is a free and open-source software library for machine learning and artificial intelligence. It can be used across a range of tasks but has a particular focus on training and inference of deep neural networks.
2	Pandas	Pandas is one of the tools in deep learning which is used for data cleaning and analysis.it has features which are used for exploring,cleaning,transforming and visualizing from data.
3	Numpy	We are using it for the image matrix handling
4	Seaborn	Seaborn is a plotting that offers a simple interface,sensible defaults for plots needed for machine learning and most importantly the plots are aesthetically better looking than those in matplotlib.

Architecture of ANN:

Welcome to the Applied Deep Learning tutorial series. We will do a detailed analysis of several deep learning techniques starting with Artificial Neural Networks (ANN), in particular Feedforward Neural Networks. What separates this tutorial from the rest you can find online is that we'll take a hands-on approach with plenty of code examples and visualization. I won't go into too much math and theory behind these models to keep the focus on application.



Artificial Neural Networks (ANN) are multi-layer fully-connected neural nets that look like the figure below. They consist of an input layer, multiple hidden layers, and an output layer. Every node in one layer is connected to every other node in the next layer. We make the network deeper by increasing the number of hidden layers.

Work Flow:

- Step 1: Import require Libraries
- Step 2: Analysis the data
- Step 3: Preprocess data function
- Step 4: Train data
- Step 5: load the data
- Step 6: Split data into test and train
- Step 7: Design ANN model
- Step 8: transfer learning model visualization
- Step 9: result prediction

Dataset Name:

- House prediction dataset

Dataset location:

<https://drive.google.com/drive/folders/1-2sKf-bdS70eAdtLCj8i0m2fc0BIblay?usp=sharing>

GitHub Code link:

<https://github.com/savanbhatiya/House-price-prediction>

Output:

```
y_pred = model_price.predict(X_test).reshape(X_test.shape[0])

# Create a dataframe to put the two columns of the true value and the prediction
pred_df = pd.DataFrame({'Actual value':Y_test, 'Predicted value':y_pred})
print(pred_df.head())
```

	Actual value	Predicted value
0	85.0	62.755238
1	47.0	42.899002
2	43.0	42.899002
3	24.0	42.899002
4	30.0	42.899002

```
mean_absolute_error(y_true=pred_df['Actual value'], y_pred=pred_df['Predicted value'])
```

36.50715257955664