

A Novel Hybrid House Price Prediction Model

Sureyya Akyuz¹, Birsen Eygi Erdogan², and Ozlem Yildiz³

¹Bahcesehir Universitesi Muhendislik ve Doga Bilimleri Fakultesi

²Marmara Universitesi

³Bahcesehir University

October 16, 2020

Abstract

The real estate sector is evolving and changing rapidly with the increase in housing demand, and new luxury housing projects appear every day. The reliability of housing market investments is largely dependent on accurate pricing. The aim of this study is to introduce a dynamic pricing procedure that estimates housing prices using the most important attributes of a house. To this end, a hybrid modeling system is proposed employing linear regression, clustering analysis, nearest neighborhood classification, and the Support Vector Regression (SVR) method. The housing data of the Kadikoy area in Istanbul, collected via manual web scraping, was used for the raining and validation of the proposed algorithm. The results of the hybrid model were compared using multiple linear regression, ridge regression, and Support Vector Machines (SVMs). The experimental results show that the proposed model is superior, both in terms of Residual Mean Square Error (RMSE) and Mean Absolute Percentage Error (MAPE) measures. Therefore, the proposed dynamic hybrid modelling structure can be successfully used for predicting house pricing.

Hosted file

Sureyya_ozogur_akyuz.pdf available at <https://authorea.com/users/362237/articles/487046-a-novel-hybrid-house-price-prediction-model>

Hosted file

Sureyya_ozogur_akyuz.tex available at <https://authorea.com/users/362237/articles/487046-a-novel-hybrid-house-price-prediction-model>

Hosted file

Definitions.sty available at <https://authorea.com/users/362237/articles/487046-a-novel-hybrid-house-price-prediction-model>

Hosted file

mybibfilehouses.bib available at <https://authorea.com/users/362237/articles/487046-a-novel-hybrid-house-price-prediction-model>

Hosted file

elsarticle.dtx available at <https://authorea.com/users/362237/articles/487046-a-novel-hybrid-house-price-prediction-model>





