World Academy of Science, Engineering and Technology
International Journal of Computer and Information Engineering
Vol:19, No:02, 2025

Real Estate Price Classification Using Machine Learning Techniques

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Abstract : Abstract— The continued advances in Artificial Intelligence (AI) and Machine Learning (ML) have boosted the interest of tax authorities in developing smart solutions as efficient alternatives to their actual fraud detection mechanisms. In particular, the real estate data collected by the administrations promoted the efforts to develop advanced analytics models aimed at detecting fraudulent real estate transactions. Specifically, supervised and unsupervised Machine Learning techniques have been associated with the available large datasets to improve overall taxpayer compliance. This research introduces a machine-learning approach intended to classify land and building prices in Saudi Arabia. Specifically, it intends to group real estate transactions reported into homogeneous groups based on relevant features. Moreover, the proposed solution classifies the lands and buildings prices in Saudi city, neighborhood, and schema. In fact, the outcomes of the clustering task are fed into a supervised machine learning process to categorize future real estate transactions into “Fair”, “Under-valued” or “Over-valued” classes. In particular, the experimental findings indicate that associating clustering algorithms with Random Forest (RF) model yields an accuracy of 99%.

Keywords : classification, clustering, machine learning, real estate price
Conference Title : ICICS 2025 : International Conference on Information and Computer Sciences
Conference Location : Jeddah, Saudi Arabia
Conference Dates : February 17-18, 2025