

Localized Explainability for Machine Learning Valuation Models

Machine Learning (ML) models have demonstrated remarkable performance in the valuation of real property but are often perceived as black boxes, raising concerns about trust and transparency. Explainability is the concept that clarifies the output of an ML model in a way that “makes sense” to people. At MPAC, in Ontario, Canada, we implement global and local approaches to explain our machine learning model behaviours. In the global approach, we show a big-picture view of the model, and how the features collectively affect the results. In the local approach, we concentrate on individual predictions by generating instance-specific explanations. SHapley Additive exPlanations (SHAP) is a unified framework that can be used for explaining the prediction of our ML model. Typically, the baseline value for these explanations is the average of predicted values and it is used for all properties within the model. We have customized the baseline for each property according to the typical property in a neighbourhood, which increases the relevance to the subject property and the explainability of the model.



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