Homoscedasticity

Homoscedasticity is a technical word for a simple idea, that is any machine learning model's error should be evenly spread out across all levels of data. In other words, the distance between your predicted and actual values should stay relatively stable, no matter which part of your data you're looking at.

For example, in a regression model predicting house prices, homoscedasticity means that the prediction errors remain roughly the same across both lower-priced and higher-priced homes.

Hetroscedasticity

Heteroscedasticity is the opposite of homoscedasticity. Instead of consistent error variance, heteroscedasticity shows an unequal spread of residuals.

For instance, if heteroscedasticity is present in our house price model, the errors may be small for lower-priced homes but much larger for higher-priced ones, resulting in unreliable predictions.