

Introduction

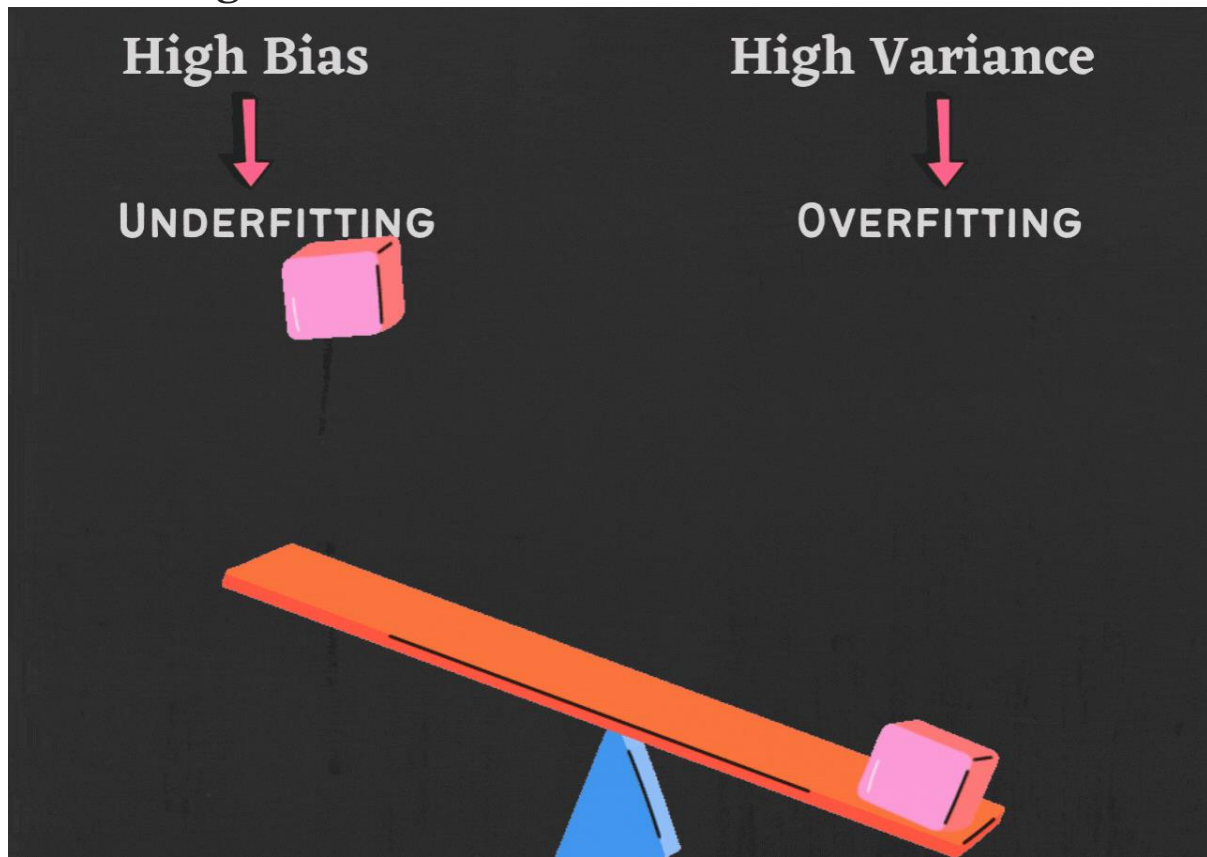
LASSO regression, also known as **L1 regularization**, is a popular technique **used in statistical modeling** and machine learning to **estimate the relationships between variables and make predictions**. LASSO stands for **Least Absolute Shrinkage and Selection Operator**.

The primary goal of LASSO regression is to find a balance between model simplicity and accuracy. It achieves this by adding a penalty term to the traditional linear regression model, which encourages sparse solutions where some coefficients are forced to be exactly zero. This feature makes LASSO particularly useful for feature selection, as it can automatically identify and discard irrelevant or redundant variables.

What is Lasso Regression?

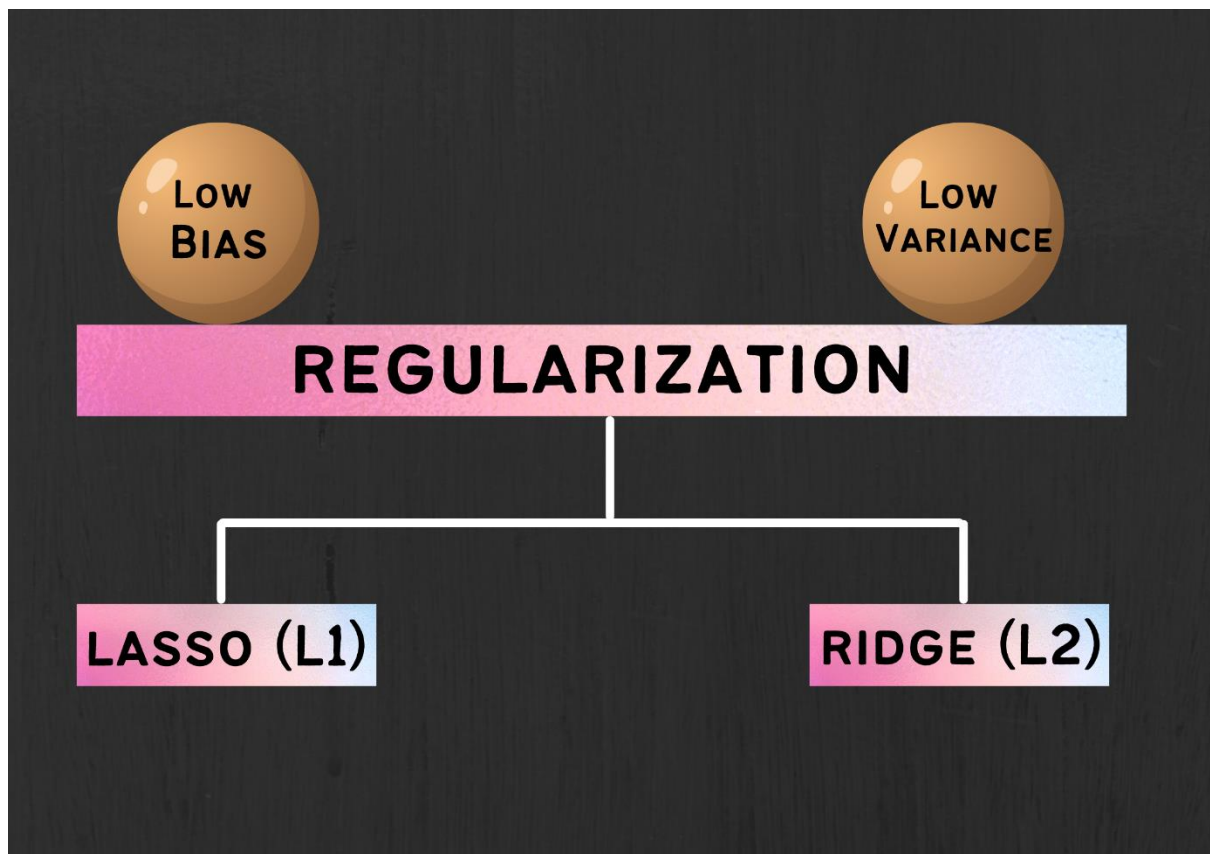
Lasso regression is a regularization technique. It is used over regression methods for a more accurate prediction. This model uses shrinkage. **Shrinkage is where data values are shrunk towards a central point as the mean.** The lasso procedure encourages simple, sparse models (i.e. models with fewer parameters). This particular type of regression is well-suited for models showing high levels of multicollinearity or when you want to automate certain parts of model selection, like variable selection/parameter elimination.

Lasso and Ridge Regularization – A Rescuer From Overfitting



What is Regularization?

- Regularization is one of the ways to improve our model to work on unseen data by ignoring the less important features.
- Regularization minimizes the validation loss and tries to improve the accuracy of the model.
- It avoids overfitting by adding a penalty to the model with high variance, thereby shrinking the beta coefficients to zero.



What is Lasso Regularization (L1)?

- It stands for Least Absolute Shrinkage and Selection Operator
- It adds L1 the penalty

What is Ridge Regularization (L2)

- It adds L2 as the penalty

What is Lasso regression used for?

Lasso regression is used for eliminating automated variables and the selection of features.

What is Ridge Regression?

Ridge regression is a specialized technique used to analyze multiple regression data that is multicollinear in nature.

What is Ridge regression? |

A **specialized technique that is used to analyze multiple regression data which is multicollinear in nature.** Ridge regression is a fundamental regularization technique, but it is not used very widely

