Partial Dependance Plots

target	feature_1	feature_2	feature_3
10	12	45	12
12	23	69	8
.	.	.	.

Dataset Preparation: Dataset from which you want to learn the individual effects of each column on a response column.

Choose a model: select a trained model you want to evalute

target	feature_1	feature_2	feature_
10	12	45	12
12	23	69	8
.	.	.	.

Select a Feature of Interest: Pick a feature you want to understand, analyzing how it affects the model's output.

feature_1	feature_2	feature_3
12	45	12
12	69	8
23	45	12
23	69	8
.	.	.

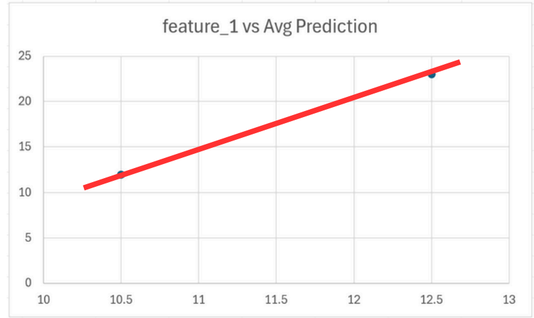
Generate Synthetic Dataset: For each value of the selected feature (can also be from a predefined range), iterate over all other actual observations (See left). So, if you have 10 values for the target feature, and 15 rows in the original DF, your final synthetic DF will have 150 rows

prediction	feature_1	feature_2	feature_3
10	12	45	12
11	12	69	8
12	23	45	12
13	23	69	8
.	.	.	.

Make Predictions: The model now predicts outcomes for each instance while the selected feature remains fixed.

Avg pred	feature_1
10.5	12
12.5	23
.	.

Group and Average: Group predictions by the selected feature's value and calculate the average prediction. This results in one average prediction per unique value of the feature.



Plot the Partial Dependence Plot (PDP): Each point on the PDP now represents the average effect of the feature's value on the model's output - holding all others features constant at their observed values. Thus giving us an idea of how our feature affects the chosen models output