

FA21-BSE-092

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SECTION B

Qns 1:

In our Datasaurus dataset experiment using decision trees, we first tried a basic model. Then we used a smart search method and a thorough search method to find the best settings for our model. By adjusting some settings, like how deep the tree goes or how many samples it needs to split, we made the model better at understanding new data. The thorough search took more time but gave us very precise settings. Overall, tweaking these settings made our model much better at predicting with the Datasaurus data.

Qns 2:

In our car price prediction task using the Decision Tree Regressor, we experimented with lowering the values of certain hyperparameters such as **max_depth**, **min_samples_split**, and **min_samples_leaf** during the hyperparameter tuning process. This strategy was implemented within the predefined ranges provided for Random Search and Grid Search methods.

Lowering the values of these hyperparameters had a notable impact on the model's performance. For instance, reducing **max_depth** limited the depth of the decision tree, preventing overfitting and improving generalization to unseen data. Similarly, lowering **min_samples_split** and **min_samples_leaf** encouraged the model to create smaller, less complex decision trees, which often led to better performance on the test data.

Furthermore, our experiments revealed that the best results were often achieved with specific parameter values within the given ranges.