

# Model Evaluation & Validation Project Rubric

## Overview

This rubric is here to help you understand the expectations for how your project will be evaluated. It is the same rubric that the person evaluating your project will use. You should look at the rubric before you begin working on this project and before you submit it.

Criteria	Meets Specifications
<b>Quality of Code</b>	
<b>Functionality</b>	All coding sections run fine without error. Students do not alter the starting code beyond what is requested.
<b>Data Exploration</b>	
<b>Statistical Analysis</b>	All requested information about the Boston housing data is accurately supplied to within a tolerance of +/-0.05. Students use the numpy library in the provided template code to obtain results.
<b>Evaluating Model Performance</b>	
<b>Performance Metric</b>	Student uses an appropriate error scoring metric from the list provided and provides ample reasons for doing so.
<b>Testing/Training Split</b>	Student provides a valid reason why data is split into training and testing data. Student implements this split in code.
<b>Cross Validation</b>	Student justifies a valid cross validation technique for gridsearch to use.
<b>Gridsearch</b>	Student properly implements grid search and justifies why.
<b>Analyzing Model Performance</b>	
<b>Learning Curves and Training Analysis</b>	Student correctly identifies the relationship between the training and test error as training size increases.
<b>Learning Curves and Bias &amp; Variance Analysis</b>	Student provides analysis for both max depth 1 and 10 learning curve graphs. Both graphs have ample explanation if they suffer

	either high bias/underfitting or high variance/overfitting and are reasonably justified.
<b>Error Curves and Model Complexity</b>	Student identifies how the training and error curves relate to the increasing model complexity.
<b>Picking the Optimal Model</b>	Student clearly picks an optimal model from the model complexity graph with reasonable justification.
<b>Model Prediction</b>	
<b>Predicted Housing Price</b>	Student's model gives a valid housing price with detailed model parameters (max depth).
<b>Comparing Model Price to Housing Statistics</b>	Student compares prediction price to earlier statistics and justifies why the price is reasonable.