Having learned about linear regression models and algorithms for estimating the parameters of such models, you are now ready to assess how well your considered method should perform in predicting new data. You are also ready to select amongst possible models to choose the best performing.

This module is all about these important topics of model selection and assessment. You will examine both theoretical and practical aspects of such analyses. You will first explore the concept of measuring the "loss" of your predictions, and use this to define training, test, and generalization error. For these measures of error, you will analyze how they vary with model complexity and how they might be utilized to form a valid assessment of predictive performance. This leads directly to an important conversation about the bias-variance tradeoff, which is fundamental to machine learning. Finally, you will devise a method to first select amongst models and then assess the performance of the selected model.

The concepts described in this module are key to all machine learning problems, well-beyond the regression setting addressed in this course.