

This assignment is focused on fitting and comparing regression models. Your task is to fit 9 polynomial models from degree 1 (linear relationship) to degree 9 (a 9th degree polynomial). You will interpret behavior through analyzing the coefficient estimates and by visualizing predictions from the models. You must select the best performing model and you will do so several different ways. You will first consider performance on the training set alone, then use a single train/test split, and finally using 5-fold cross-validation.

You will work with 3 different data sets, but all 3 data sets were generated from the same **data generating process**. These 3 different versions of the data will allow you consider the influence of sample size (low vs high) and uncontrollable variation or noise (low vs high) on the model selection process.