EXERCISES - THEORETICAL CONCEPTS OF MACHINE LEARNING
Assignment 2 Documentation

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March 16, 2016

1. Exercise 2

Figure 1: Points representation after splitting into train/test

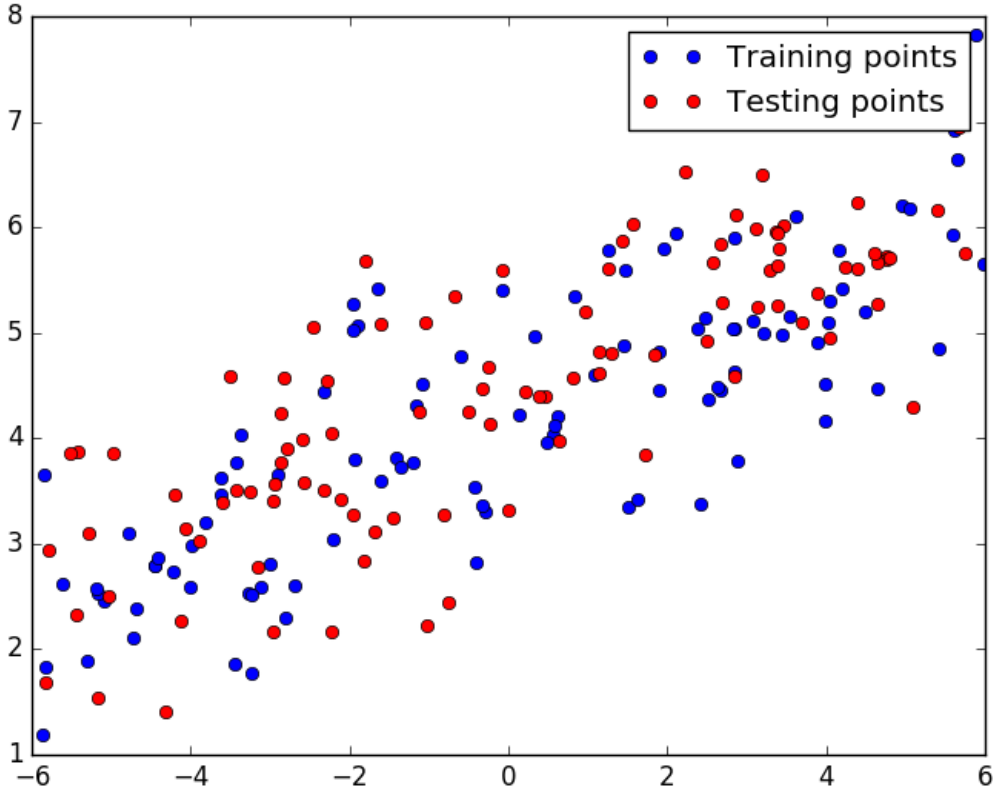

Figure 2: Fitted polynomials (with degrees 0, 1, 2, 5, 10, 15, 20, 25)

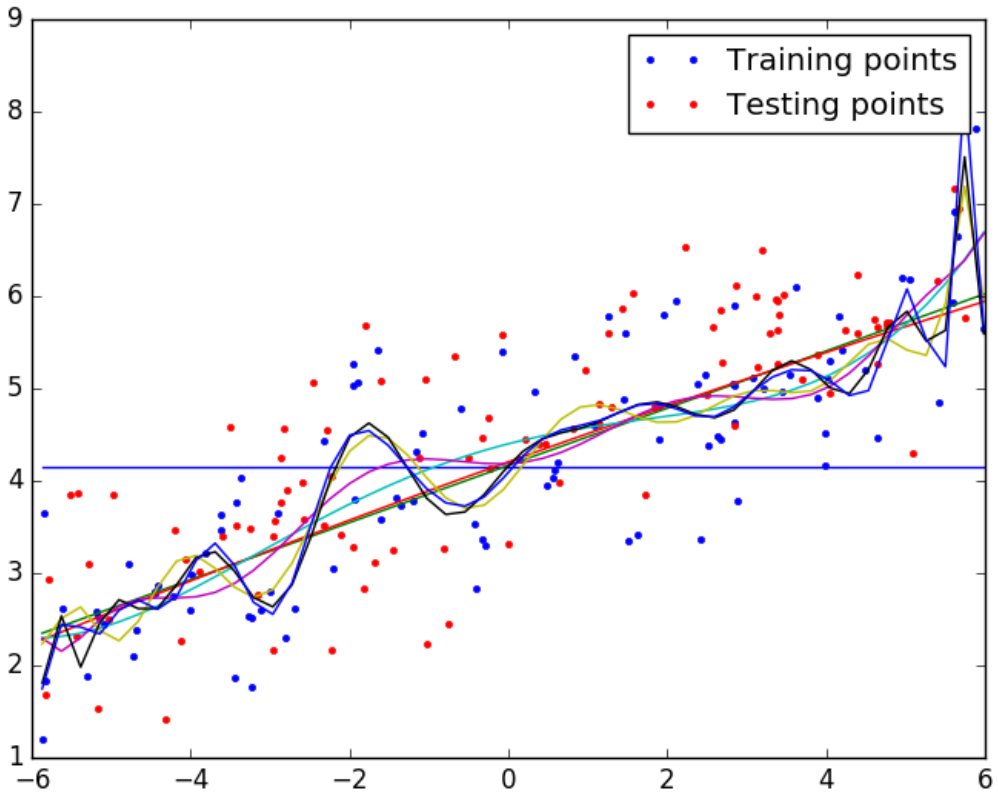

Figure 3: Quadratic loss visualization for training and for testing. One can notice that the value of the loss "starts" very high - due to the fact that the simplicity of the polynomial (just a line) cannot capture the shape of the data. The error value starts dropping once we increase the order of the polynomials. The loss keeps decreasing the higher the degree of the polynomial is - for the training set. However, for the testing set, it starts increasing from a point on, the polynomial over-fitting the training set (which is apparently not a great predictor of the shape of the test set).