Introduction to Gaussian Processes

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Abstract

A wide variety of methods exists to deal with supervised learning, as restrict a class of linear functions of the inputs, as linear regression, or give a prior probability to every possible function, giving high probability to the functions we consider more likely. The second approach is a way to Gaussian process itself. We will make the pathway through a intuitive construction of this framework.

1 Introduction

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2 Linear Regression

Starting with a simple regression problem. Be the dataset $\mathrm{D} = \{x_i, y_i | i = 1, \ldots, N\}$, where we observe a real-valued input variable x and a measured real-valued variable y. Then, we'll use synthetically generated data for comparison against any learned *model*. And N will be the number od observations of the value y. Our objetive is make predictions of the new value $\hat{y}$ for some new input $\hat{x}$

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