


Prediction

$f(x)$ is a Gaussian Process with stationary prior, $m(x) = 0$

$$\begin{aligned} p(f(x)|f(x_1), \dots, f(x_n)) &= \frac{p(f(x), f(x_1), \dots, f(x_n))}{p(f(x_1), \dots, f(x_n))} \\ &= \frac{\mathcal{N}(f(x), f(x_1), \dots, f(x_n)|0, \tilde{C})}{\mathcal{N}(f(x_1), \dots, f(x_n)|0, C)} \end{aligned}$$


$$C = \begin{pmatrix} K(0) & K(x_1 - x_2) & K(x_1 - x_3) & \dots & K(x_1 - x_n) \\ K(x_2 - x_1) & K(0) & K(x_2 - x_3) & \dots & K(x_2 - x_n) \\ \vdots & \vdots & \vdots & \ddots & \vdots \\ K(x_n - x_1) & K(x_n - x_2) & K(x_n - x_3) & \dots & K(0) \end{pmatrix}$$

