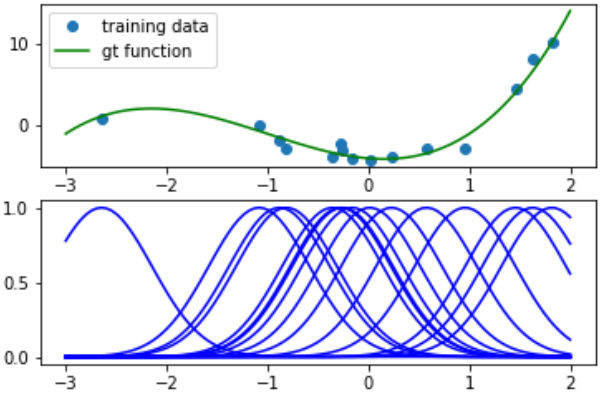
For a Gaussian kernel, the prediction corresponds to

$$f(\boldsymbol{x}) = \sum_i \alpha_i k(\boldsymbol{x}_i, \boldsymbol{x}) = \sum_i \alpha_i \exp\left(-\frac{||\boldsymbol{x} - \boldsymbol{x}_i||^2}{2\sigma^2}\right)$$

- The kernel allows setting the centres adaptively to the available data!
- One centre per data-point



Comparison: Linear regression with radial basis function (RBF) features

$$f(\boldsymbol{x}) = \sum_i w_i \phi_i(\boldsymbol{x}) = \sum_i w_i \exp\left(-\frac{||\boldsymbol{x} - \boldsymbol{\mu}_i||^2}{2\sigma^2}\right)$$

$\boldsymbol{\mu}_i \ldots$ i^{th} center location (fixed)