

One predictor

$$X \cdot w_1 + b_1 = \mu$$

The diagram illustrates the calculation of a mean  $\mu$  for a single predictor. It shows a feature  $X$  (represented by a box with three dots) multiplied by a weight  $w_1$  (represented by a box containing a narrow red bell curve), and then a bias  $b_1$  (represented by a box containing a wider blue bell curve) is added. The result is the mean  $\mu$  (represented by a box containing a wide black bell curve with three dots).

Multiple predictors

$$X \cdot w_2 + b_2 = \mu$$

The diagram illustrates the calculation of a mean  $\mu$  using multiple predictors. It shows a feature vector  $X$  (represented by a row of three boxes, each containing a bell curve) multiplied by a weight vector  $w_2$  (represented by a column of three boxes, each containing a narrow red bell curve), and then a bias  $b_2$  (represented by a box containing a wider blue bell curve) is added. The result is the mean  $\mu$  (represented by a box containing a wide black bell curve with three dots).

$Y \sim \text{Normal}(\mu, \sigma)$