

## MLE Assignment

### 1) MLE of a Gaussian p\_model

Let's say you are examining some dataset. In this case that dataset is :

[4, 5, 7, 8, 8, 9, 10, 5, 2, 3, 5, 4, 8, 9]

You predicted that this dataset is generated by a probability distribution. When you do MLE, you are looking for that value.

In order to do the MLE, we use the Bayesian method. In the Bayesian method you use a completely flat prior over that and maximize the probability of being correct.

### 2) MLE of a Gaussian p\_model for a regression problem

If you have two datasets. Linear regression will fit a straight line between an independent variable  $x$  and an dependent variable  $y$

For  $n$  data samples the assumed linear relationship can be modeled as:

$$y_i = \theta_0 + \theta_1 x_i + e_i$$

$$i = 1, \dots, n$$

$$x = \{x_1, \dots, x_n\}$$