

## Practical 3 - Model Estimation

(one medium-length exercise  
on Maximum Likelihood Estimation,  
MLE).

①

Given: •) i.i.d. data samples ~~from~~  $x_1, \dots, x_N$   
From a normal distribution  
 $\mathcal{N}(x | \mu, \sigma^2)$  with unknown mean  $\mu$   
and variance  $\sigma^2$ .

Task: •) derive the formulas for the  
MLEs  $\mu_{ML}$  and  $\sigma_{ML}^2$ .