Classic Bayes

$$\theta = (\mu, \sigma^2) \sim \pi(\mu, \sigma^2)$$

$$\implies y \sim \mathcal{N}(\mu, \sigma^2)$$

Bayesian Inverse Problem

$$\underline{u} = \begin{bmatrix} x_1 \\ \vdots \\ x_n \end{bmatrix} \sim \pi(\underline{u}) \implies \boxed{\text{MODEL}} \implies \theta = (\mu, \sigma^2)$$