



BUILDING AND MODEL

My first bayesian regression model

• Given the matched pairs:

$$(x,y)=\{(x_1,y_1),\cdots,(x_n,y_n)\}$$

Definieren Sie:

$$y_i \sim \text{Normal}(\mu_i, \sigma)$$

$$\mu_i = \alpha + \beta x_i$$

- And a set of priors on the parameters:

$$\alpha \sim P(\alpha)$$

$$\beta \sim P(\beta)$$

$$\sigma \sim P(\sigma)$$



$P(y|\theta)$



$P(\theta)$

BUILDING A MODEL

My first bayesian regression model

- Given the matched pairs:

$$(x, y) = \{(x_1, y_1), \dots, (x_n, y_n)\}$$

- Define a likelihood:

$$\left. \begin{array}{l} y_i \sim \text{Normal}(\mu_i, \sigma) \\ \mu_i = \alpha + \beta x_i \end{array} \right\} P(y \mid \theta)$$

- And a set of priors on the parameters:

$$\left. \begin{array}{l} \alpha \sim P(\alpha) \\ \beta \sim P(\beta) \\ \sigma \sim P(\sigma) \end{array} \right\} P(\theta)$$

HOW DO WE CHOOSE THE PRIORS?!

$$\alpha \sim P(\alpha) \text{ ?}$$

$$\beta \sim P(\beta) \text{ ?}$$

$$\sigma \sim P(\sigma) \text{ ?}$$