Out usual regression model

Building a model

- Given the matched pairs:

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

- Define a likelihood:

$$y_i \sim Normal(\mu_i, \sigma)$$

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

- And a set of priors on the parameters:

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

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

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

$$P(y \mid \theta)$$


$P(\theta)$

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How do we choose the priors?!

$$\alpha \sim P(\alpha)$$
$$\beta \sim P(\beta)$$
$$\sigma \sim P(\sigma)$$