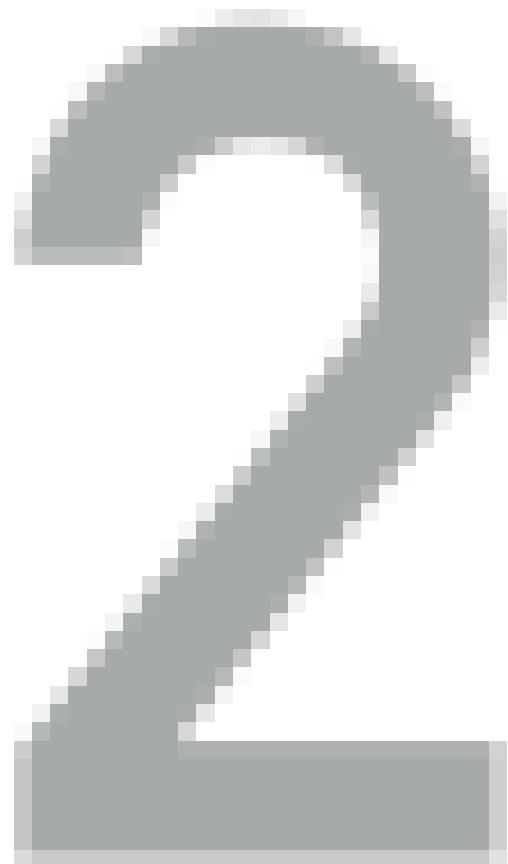
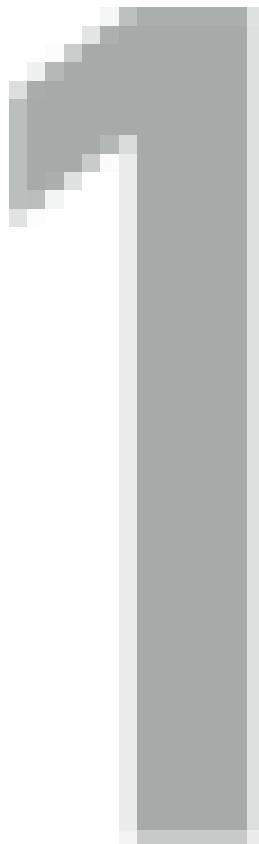


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- In bayesian statistics π is the posterior

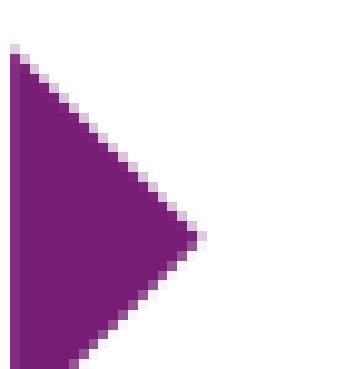
$$\pi(x) = \frac{L(y|x)p(x)}{p(y)} = \frac{\gamma(x)}{Z}$$

- ▶ $\gamma(x)$ is the un-normalised posterior density

$$\gamma(x) = L(y \mid x)p(x)$$

- ▶ Normalising constant is the model evidence

$$Z = p(y) = \int_{\mathcal{X}} L(y | x)p(x)dx$$



Given a prior $p(x)$ and likelihood $L(x)$



EXAMPLE: BAYESIAN STATISTICS

- ▶ Given a prior $p(x)$ and likelihood $L(y | x)$

- ▶ In bayesian statistics π is the posterior

$$\pi(x) = \frac{L(y | x)p(x)}{p(y)} = \frac{\gamma(x)}{Z}$$

- ▶ $\gamma(x)$ is the un-normalised posterior density

$$\gamma(x) = L(y | x)p(x)$$

- ▶ Normalising constant is the model evidence

$$Z = p(y) = \int_{\mathbb{X}} L(y | x)p(x)dx$$

- ▶ For us, the data is an abstraction

EXAMPLE: MOLECULAR DYNAMICS