

Beta Distribution - Introduction

↳ prob distribution of probs

Weather (w) $\begin{cases} \rightarrow \text{good} \\ \rightarrow \text{bad} \end{cases}$

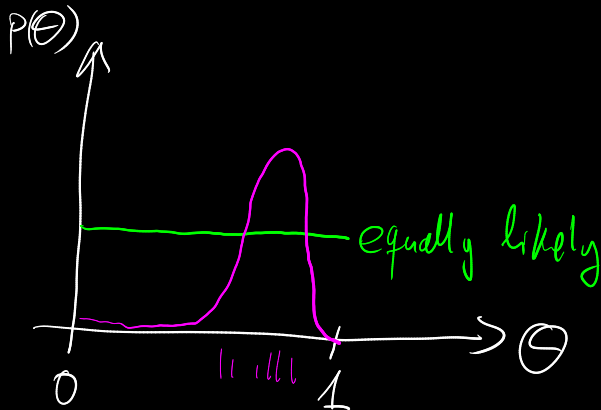
$$W \sim \text{Bernoulli}(\theta)$$

θ ... prob of observing good weather
(e.g. $\theta = 0.8$)

One year $\theta = 0.7$
another year $\theta = 0.9$

$P(\theta = 0.8)$... prob of observing good weather with 80% chance

$\theta \in [0, 1]$



↳ Beta Dist

$$\theta \sim \text{Beta}(\theta; \alpha, \beta) \sim \theta^{\alpha-1} \cdot (1-\theta)^{\beta-1}$$

! normalize

$$\text{Beta}(\theta; \alpha, \beta) = \frac{1}{B(\alpha, \beta)} \theta^{\alpha-1} (1-\theta)^{\beta-1}$$

↑ Beta Dist ↑ Beta Function

↖ Beta parameter