Uncertainty of the world

[1]

[1] https://deepai.org/machine-learning-model/text2img

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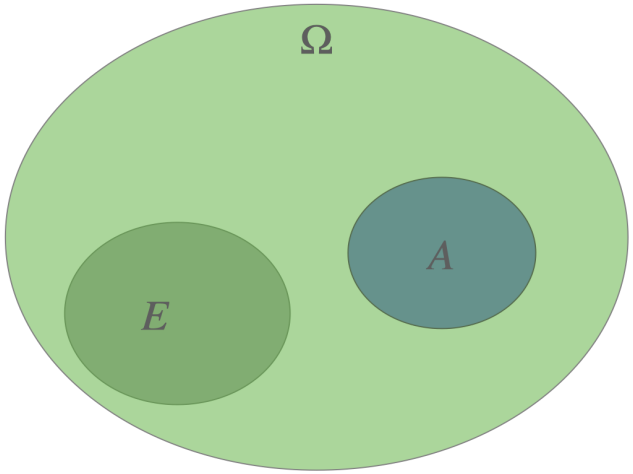
How likely is this event going to happen?

Frequentist Probability Theory



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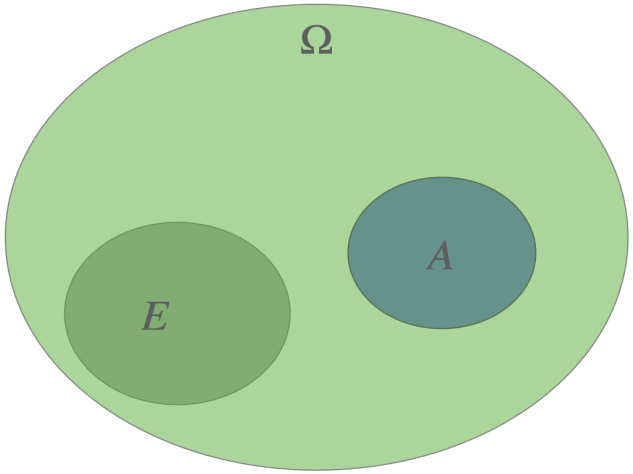

Frequency Approach

1. Ω: all possible outcomes of an experiment, why is it called a sample space?

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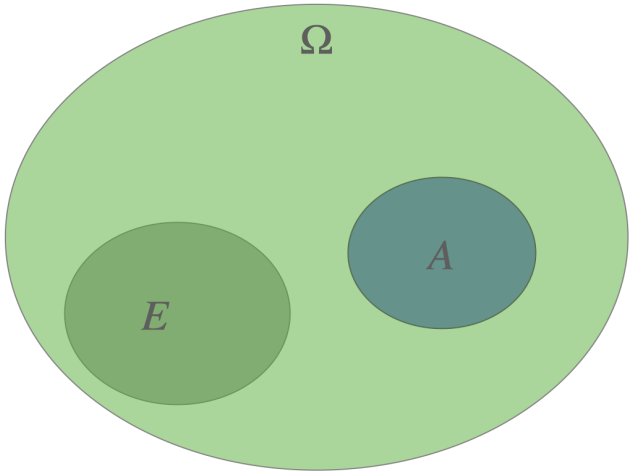

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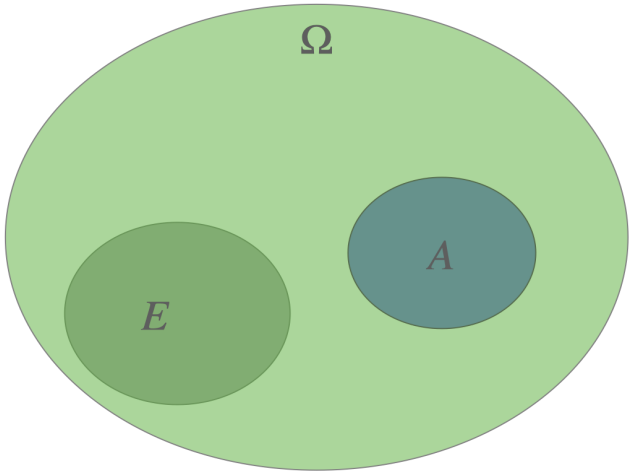

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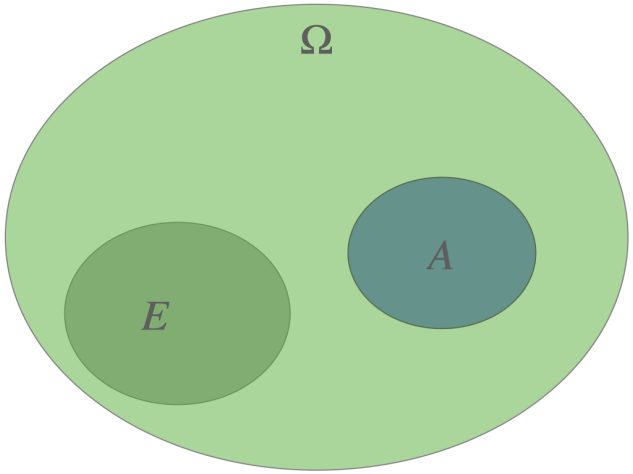

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Probability of an event

$f(e) = \frac{Frequency\ of\ A}{Frequency\ of\ \Omega}$, use permutation and combination!

Formal properties

A probability mass function $f : \mathcal{P}(\Omega) \to \mathcal{R}$

- $\forall E \in \mathcal{P}(\Omega).0 \leq f(E) \leq 1.$
- $f(\mathcal{P}(\Omega)) = 1.$
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Events E_1 ... or E_k

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Events E_1 ... and E_k

$$f(E_1 \cap ... \cap E_k) = \Pi f(E_i)$$

The Spring CS Picnic RSVP (May 10th)

`http://tinyurl.com/grinnell-cs-picnic`

Q & A