

Uncertainty

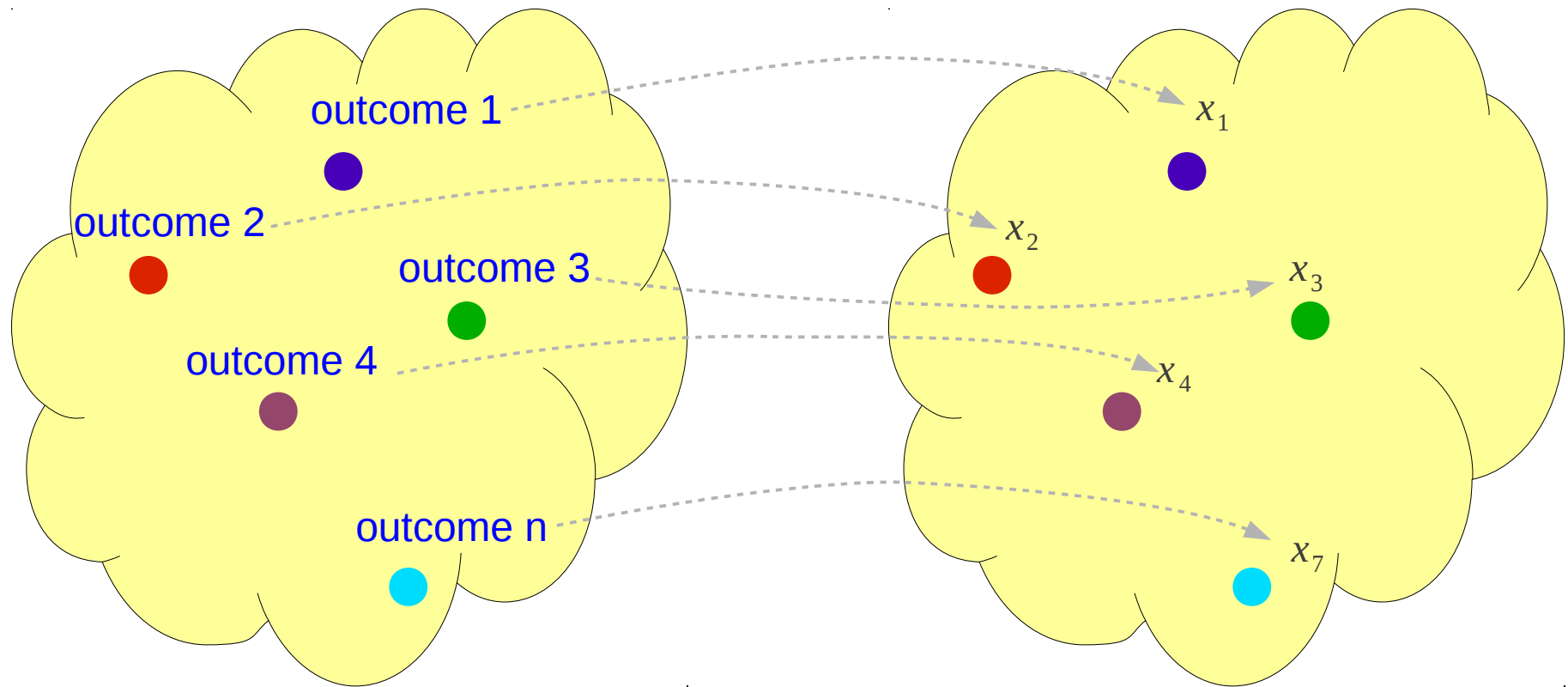
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Random Variable



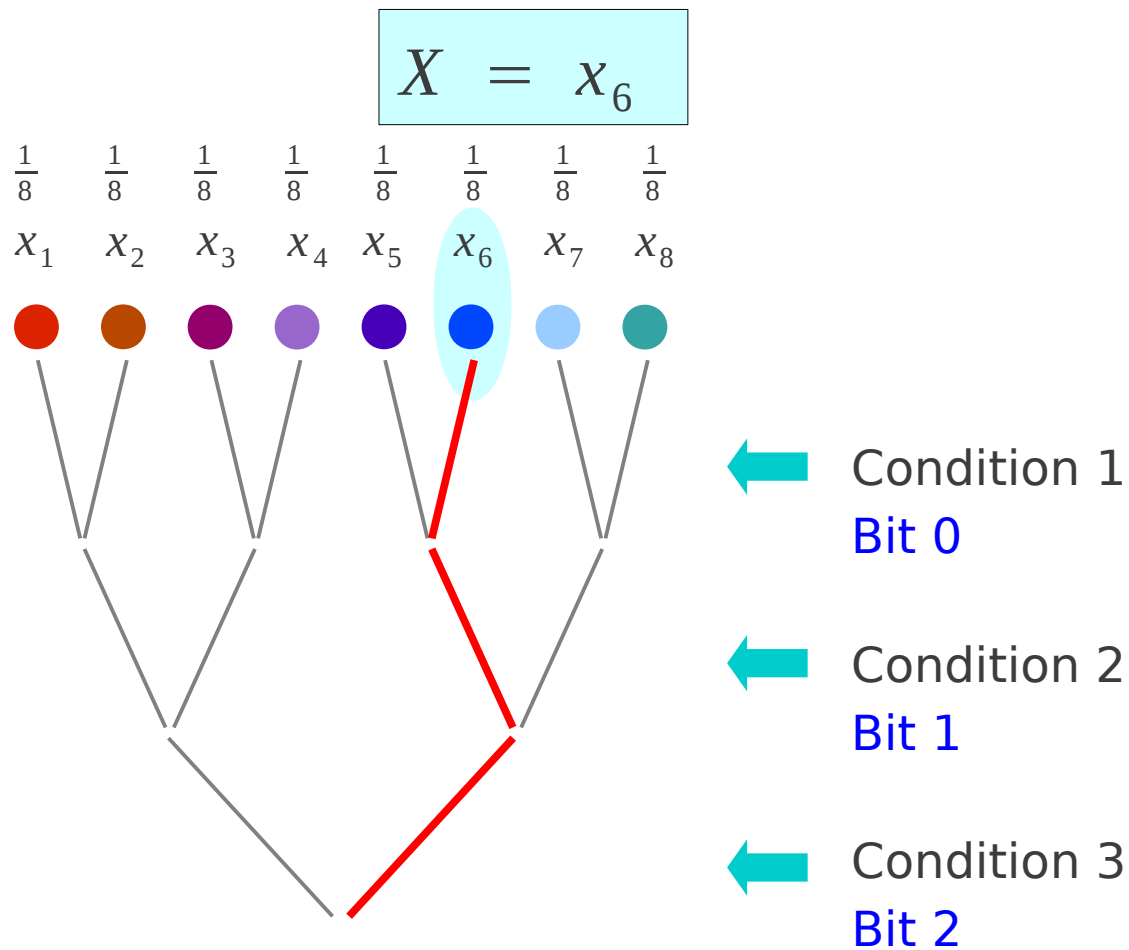
State Space

$$\Omega = \{outcome_1, outcome_2, \dots, outcome_n\}$$

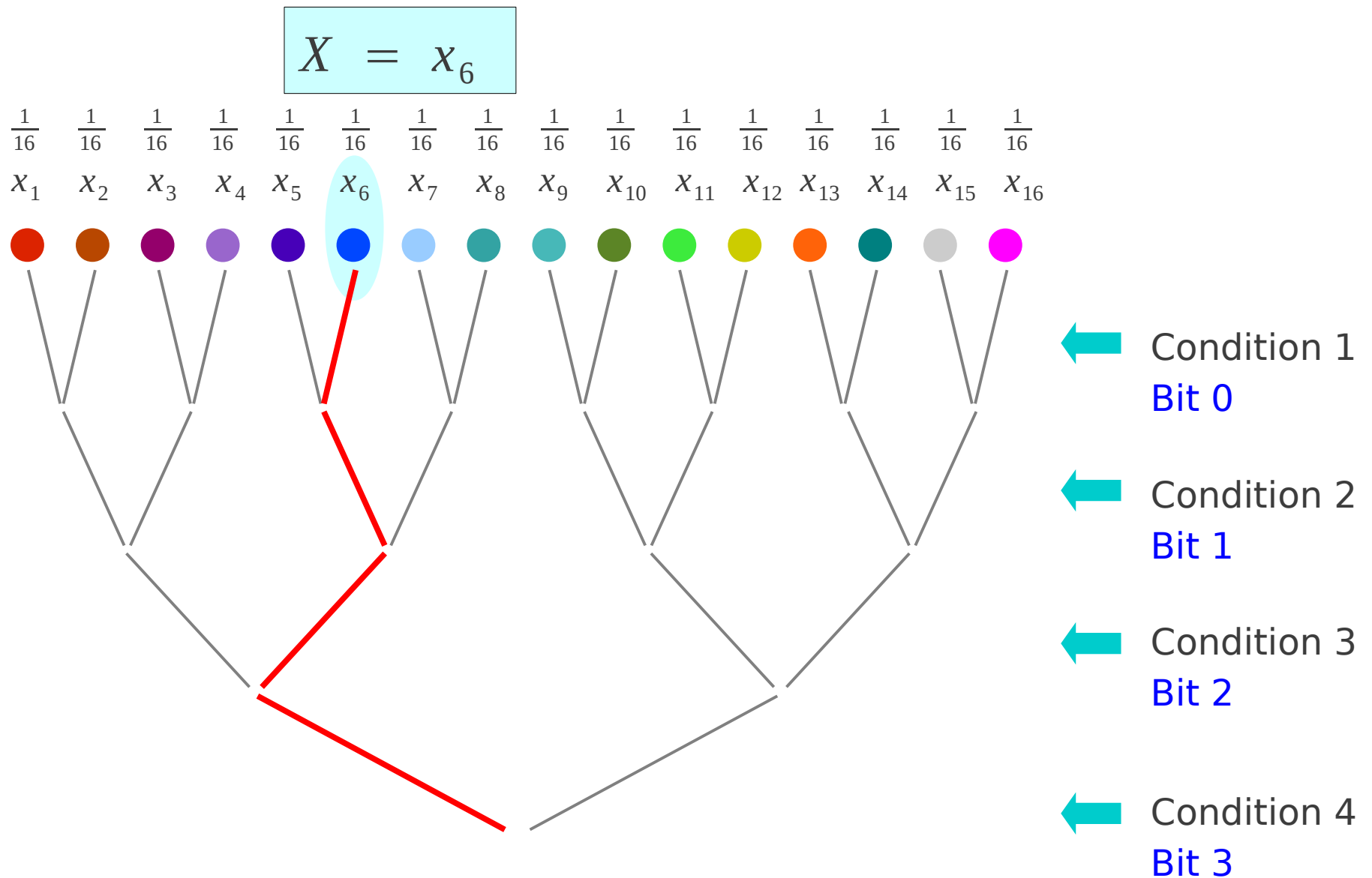
Random Variable

$$X = x_i \quad i = 1, 2, \dots, n$$

Event



Event



Self-Information

$$\underline{I(x_i)} = \log\left(\frac{1}{P(x_i)}\right) = -\log \underline{P(x_i)}$$

Unit = bits \log_2
Unit = nats \log_e

Probability of
the event $X = x_i$

Self-information 

Probability 

Common Emitter (2)

Common Emitter (2)

Maintain Magnetic Field

Storing Magnetic Energy

Dissipate Magnetic Energy

References

[1] <http://en.wikipedia.org/>

[2] R Bose, Information Theory Coding and Cryptography, 2003