Review of Probability

- Event $X \rightarrow$ probability of its occurrence:

$$0 \leqslant P(x) \leqslant 1$$

- If an event can have n outcomes, the sum of all probabilities must be 1:

$$X : \{x_1, x_2, \ldots x_i, \ldots x_n\}$$
$$\sum_{i=1}^{n} P(x_i) = 1$$

- Events can be
  - dependent : related : if sunny, I'm likely to go out
  - independent : unrelated : coin tosses

- Joint probability : the probability of two or more independent events to occur together

  The P of getting to consecutive heads:

  $$P(H) \cdot P(H) = 0.5 \cdot 0.5 = 0.25$$

  product of Ps

- We can build probability distributions of event measurements, which can be:
  - Continuous : if X values are numerical / continuous
  - Discrete : if X values are categorical