W7. Conditional probability

**LO**

Recall how to compute conditional probabilities

Visualise joint probabilities using Euler diagrams and probability trees

State and apply Bayes’ theorem

Describe and use Markov chains

1. **Logic foundation**

A close-up of a test

Description automatically generated

A white paper with black squares and numbers

Description automatically generated

1. **Bayes’ Theorem**

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1. **Conditional and joint probabilities**

A yellow and black text

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A diagram of a diagram

Description automatically generated with medium confidence

A diagram of a number of circles

Description automatically generated

A diagram of a diagram of a diagram

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**4. Markov chains**

Stochastic mode随机模式(每一次都不受之前影响，如抛硬币)

Probabilities going out of any one node should add up to 1

There is a mathematical theory of Markov chains, with **ways to compute probabilities to reach states**, path lengths etc.

For this course, we ask you to do **2 things:**

**Draw up** a Markov chain for a new problem,

Write code to allow you to simulate a **Markov chain many times**.

A diagram of a mathematical equation

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A white board with writing on it

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