Key attributes

- The number of axes it has, its **rank**. For instance, a 3D tensor has 3 axes, and a matrix has 2 axes.
- Its **shape**. This is a tuple of integers that describes how many dimensions the tensor has along each axis.
- Its **data type** (usually called dtype throughout Python libraries). This is the type of the data contained inside the tensor; for instance a tensor's type could be float32, uint8, float64…

Real-world examples of data tensors

- Vector data: 2D tensors of shape (samples, features).
- Time-series data or sequence data: 3D tensors of shape (samples, time-steps, features).
- Images: 4D tensors of shape (samples, width, height, channels) or (samples, channels, width, height).
- Video: 5D tensors of shape (samples, frames, width, height, channels) or (samples, frames, channels, width, height).