



## Entropy

### 1 Why

### 2 Definition

The entropy of a distribution is the expectation of the negative logarithm of the distribution under the distribution.

#### 2.1 Notation

Let  $R$  denote the set of real numbers. Let  $A$  be a finite set. Let  $p : A \rightarrow R$  be a distribution. The entropy of  $p$  is

$$-\sum_{a \in A} p(a) \log(p(a)).$$

We denote the entropy of  $p$  by  $H(p)$ .