

S = full data set

S_{target} = target value \rightarrow vectorize 1 and 0 ?

A = attributes \rightarrow vectorize 0, 1, 2, ... ?

Entropy(S)

Wind

Strumen

$$\begin{array}{l} \text{no} \\ \text{yes} \end{array} \quad \begin{array}{l} 3 \\ 3 \end{array} \quad \begin{array}{l} = \\ = \end{array} \quad - \frac{3}{6} \left(\log_2 \frac{3}{6} \right) - \frac{3}{6} \left(\log_2 \frac{3}{6} \right)$$

Wauh

$$\begin{array}{l} \text{no} \\ \text{yes} \end{array} \quad \begin{array}{l} 2 \\ 6 \end{array} \quad \begin{array}{l} = \\ = \end{array} \quad - \frac{2}{8} \left(\log_2 \frac{2}{8} \right) - \frac{6}{8} \left(\log_2 \frac{6}{8} \right)$$
$$= 0.811$$

$$,940 - 0.811 = 1$$

$$= 0.$$

$$\text{Entropy} = - \left(\frac{S_p}{S_T} \left(\log_2 \frac{S_p}{S_T} \right) \right) - \left(\frac{S_n}{S_T} \left(\log_2 \frac{S_n}{S_T} \right) \right)$$

$$S_p, S_n, S_T$$

Attribute

$$S_T = \frac{A_1}{S_T} \left(E(A_1) \right) - \frac{A_2}{S_T} \left(E(A_2) \right) - \dots$$

need to break up values in attribute

$$A_1 \begin{matrix} + \\ - \end{matrix}$$

$A_1 \text{ total}$

$$A_2 \begin{matrix} + \\ - \end{matrix}$$

$A_1 +$

$$A_3 \begin{matrix} + \\ - \end{matrix}$$

$A_1 -$

...

A_n

$$\text{Entropy}(A_1) = - \left(\frac{A_{1+}}{A_{1T}} \left(\log_2 \frac{A_{1+}}{A_{1T}} \right) \right) - \left(\frac{A_{1-}}{A_{1T}} \left(\log_2 \frac{A_{1-}}{A_{1T}} \right) \right)$$

