

Machine Learning – Formula Sheet (Exact, Image-Based)

$$H(S) = - \sum_i p_i \log_2 p_i$$

$$Gain(S, A) = Entropy(S) - \sum_v \frac{|S_v|}{|S|} Entropy(S_v)$$

$$\hat{y} = w_0 + w_1 x_1 + \dots + w_n x_n$$

$$J = \frac{1}{n} \sum (\hat{y} - y)^2$$

$$w_j := w_j - \alpha \frac{\partial J}{\partial w_j}$$

$$\sigma(z) = \frac{1}{1+e^{-z}}$$

$$J = -\frac{1}{n} \sum [y \log(h) + (1-y) \log(1-h)]$$

$$Gini = 1 - \sum p_i^2$$