Decision Tree classifier

Gini impurity, IG

- Mathematics:

$$IG(D_p, a) = I(D_p) - \frac{N_{left}}{N_p} I(D_{left}) - \frac{N_{right}}{N_p} I(D_{right})$$

- Python:

```
def gini(p):
    return p * (1 - p) + (1 - p) * (1 - (1 - p))
```

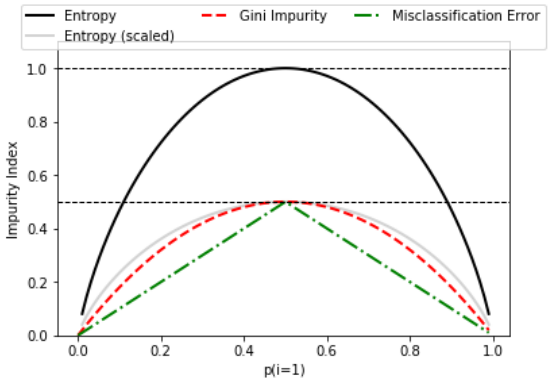
Entropy, I_H

- Mathematics:

$$I_H(t) = -\sum_{i=1}^{c} p(i|t) log_2 p(i|t)$$

- Python:

```
def entropy(p):
    return - p * np.log2(p) - (1 - p) * np.log2((1 - p))
```



Archives

The concept is learned and implement by the book “Python Machine Learning” and Python code, written by Sebastian Raschka