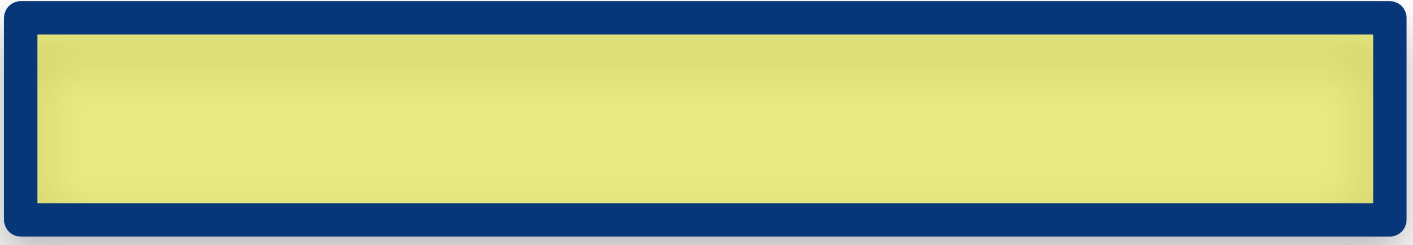
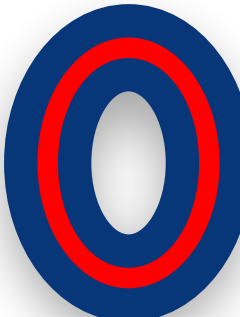
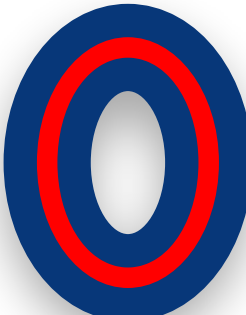
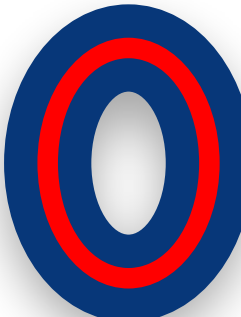

H2O.ai

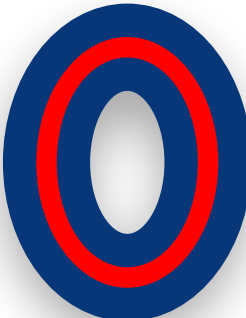


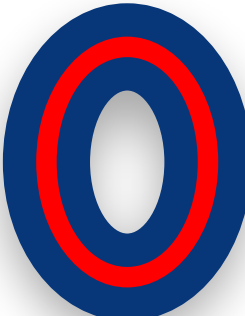
Decision Tree Inference

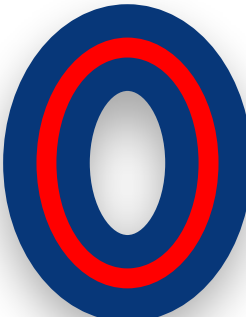


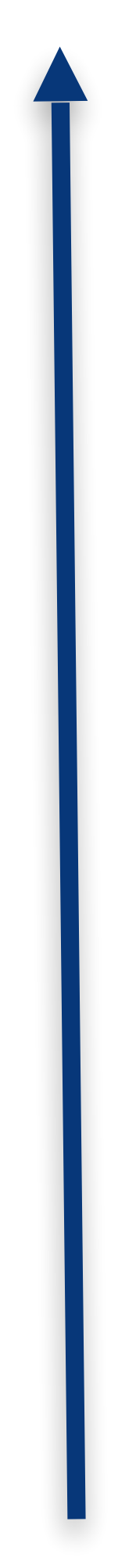













4


6

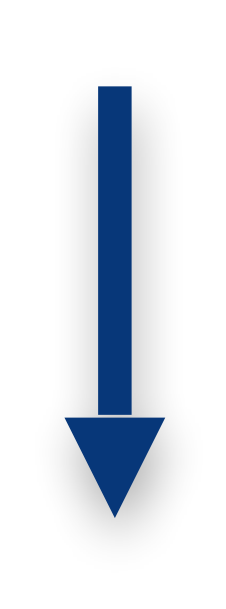
10


8


1
2


8


6



$$p(O) = 0.5$$

$$p(X) = 0.5$$

Growing a Tree: Splitting Criteria

- If starting with criterion to minimize, then learning an optimal decision tree is an NP-complete problem
- heuristic algorithms employ greedy procedure
- splitting criteria:

Classification: k classes

Entropy:

$$\sum_{i=1}^{k} \hat{p}_i \log(\hat{p}_i)$$

Gini:

$$\sum_{i=1}^{k} \hat{p}_i (1 - \hat{p}_i)$$

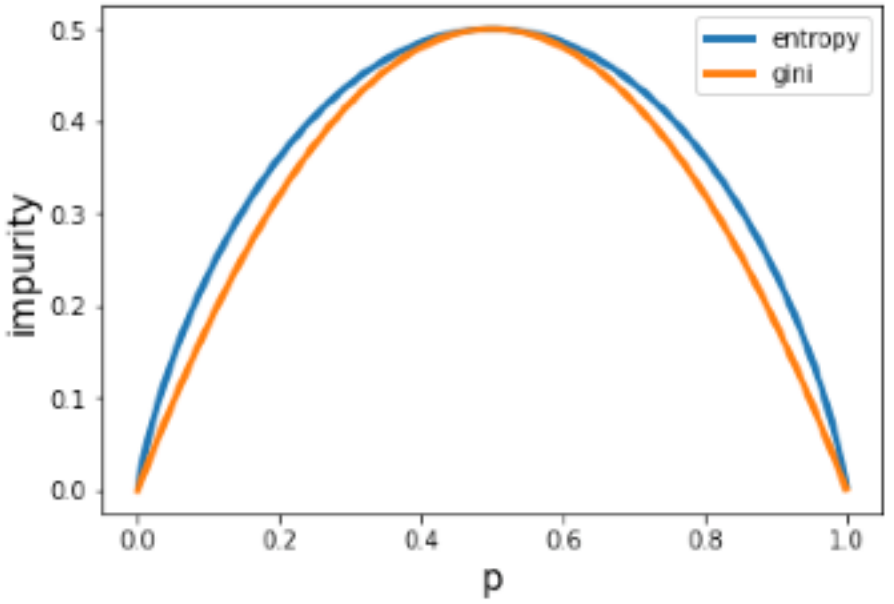
Squared error:

$$\sum_{i=1}^{n} (y_i - \hat{y})^2$$

Regression

Squared error

$$\sum_{i=1}^{n} (y_i - \hat{y})^2$$



Decision Tree Inference