

# Random Forest

## Mathematics

Step 1:  
(Gini for classification)

$$G = 1 - \sum_{i=1}^n p_i^2$$

Step 2:

Tree split (MSE for regression)

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

Step 3

Voting (Classification)

Predicted class = Mode (Tree Prediction)

Step 4

Averaging (Regression)

Predicted Value

$$\frac{1}{T} \sum_{t=1}^T \hat{y}_t$$