$$\hat{f}^{(b)}(x) = \hat{f}^{(b-1)}(x_i) + \lambda T_b(x_i)$$

$\underbrace{\qquad}_{10} \qquad \underbrace{}_{0.01} \underbrace{}_{\substack{15 \\ -4}}$

$$= 10 + 0.01 \times 15$$

$$= 10.15$$

$$= 10.15 + 0.01(-4) \quad \text{next iteration}$$

$$= 10.11$$

start here

want to get here

$k = 2$

$p =$ proportion of class 1 $\Rightarrow 1-p =$ proportion of class 2

$$\text{Gini} = \underset{\text{class 1}}{p(1-p)} + \underset{\text{class 2}}{(1-p)p}$$

$$= 2p(1-p)$$

want this small

$p = 0 \longrightarrow \text{Gini} = 0$

$p = 1 \longrightarrow \text{Gini} = 0$

$p = \frac{1}{2} \Rightarrow \frac{1}{2}$ largest value $= \frac{k-1}{k}$

$k = 3$

$$\text{Gini} = p_1(1-p_1) + p_2(1-p_2) + p_3(1-p_3)$$

Gini largest with $p_k = \frac{1}{k}$