$$f(p(i)) = \log \frac{1}{p(i)} = -\log p(i)$$
(1)

$$E(P) = \sum_{i}^{n} \log p(i) \frac{1}{p(i)} = -\sum_{i}^{n} p(i) \log p(i)$$
(2)

$$E(PQ) = -\sum_{i}^{n} p(i) \log q(i)$$
(3)

$$crossentropy = -\sum_{i}^{n} y \log y$$
(4)

$$g(D, A) = E(D) - E(D|A)$$
(5)

$$g_R(D, A) = \frac{g(D, A)}{E(D)}$$
(6)

$p_i C_i$
ϵ
$A_k A_k A_k a_i$
$N_t N_{tk} E_t(T) \alpha$

$$L = \sum_{t=1}^{|T|} N_t E_t(T) + \alpha |T|$$
(7)

$Gini(D, A) =$
$\frac{|D_1|}{|D|} Gini(D_1) +$
$\frac{|D_2|}{|D|} Gini(D_2)$
$sign(wx +$
$b)$
$wx +$
$b =$
$0 | wx +$
$b | wx +$
$by(wx +$
$b)$

$$\hat{\gamma}_i = y_i(wx_i + b)$$
(8)

$\|w\| =$
1
$wx +$
$b =$
$0 (x_i, y_i)$

$$\gamma_i = y_i(\frac{w}{\|w\|}) x_i + \frac{b}{\|w\|}$$
(9)

$\gamma =$
$\min \gamma_i \gamma \gamma_i$
$\|w\| =$
1

$$\gamma = \frac{\hat{\gamma}}{\|w\|}$$
(10)

γ

$$\max_{w,b} \gamma$$
(11)

$$s.t. y_i(\frac{w}{\|w\|} x_i + \frac{b}{\|w\|}) \geq \gamma$$
(12)

$$\max \frac{\hat{\gamma}}{\|w\|}$$