$$E_{y|x}[L(0,y)] > E_{y|x}[L(1,y)]$$

$$\sum_y P(y|x)\, L(0,y) > \sum_y P(y|x)\, L(1,y)$$

$$P(y=0|x)\, L(0,0)^{\to 0}$$

$$+ P(y=1|x)\, L(0,1) > P(y=0|x)\, L(1,0)$$

$$+ P(y=1|x)\, L(1,1)^{\to 0}$$

$$P(y=1|x) > P(y=0|x)$$

$$\frac{P(y=1|x)}{P(y=0|x)} > 1$$

$$\log \frac{P(y=1|x)}{P(y=0|x)} > 0$$

$$w \cdot x > 0$$