$$0 < \frac{1}{\ell} \qquad \frac{1}{m} < \frac{\ell}{m}$$

$$\frac{1}{2^{\cdot S}}$$

$$D_2(i) = \frac{e^{-\alpha_1 y_i h_1(x_i)} \; e^{-\alpha_2 y_i h_2(x_i)}}{m \; z_1 \cdot z_2}$$

$$\sum_i D_{t+1}(i) \; \frac{e^{-y_i \sum_t \alpha_t h_t(x_i)}}{m \; z_1 \cdots z_t} \qquad \sum_i D_{t+1}(i)$$

$$\prod_t z_t \; \boxed{\prod_t z_t} = \frac{1}{m} \sum_i e^{\sum -y_i f_i(x)}$$

$$\frac{\partial}{\partial \alpha_A} -(1-\xi) l^{-\alpha_A} + \xi l^{\alpha_t} = 0$$

$$\xi l^{\alpha_t} = (1-\xi) l^{-\alpha_t}$$

$$\frac{1-\xi}{\xi} = l^{2\alpha} \Rightarrow \alpha = \frac{1}{2} \ln\left(\frac{1-\xi}{\xi}\right)$$