Of

$$\frac{\partial L}{\partial w_{ij}^{(l)}} = \sum_{l,r,k} \frac{\partial L}{\partial O^l} \times \frac{\partial O^l}{\partial h^r} \times \frac{\partial h^r}{\partial z_k} \frac{\partial z_k}{\partial w_{ij}^{(l)}}$$

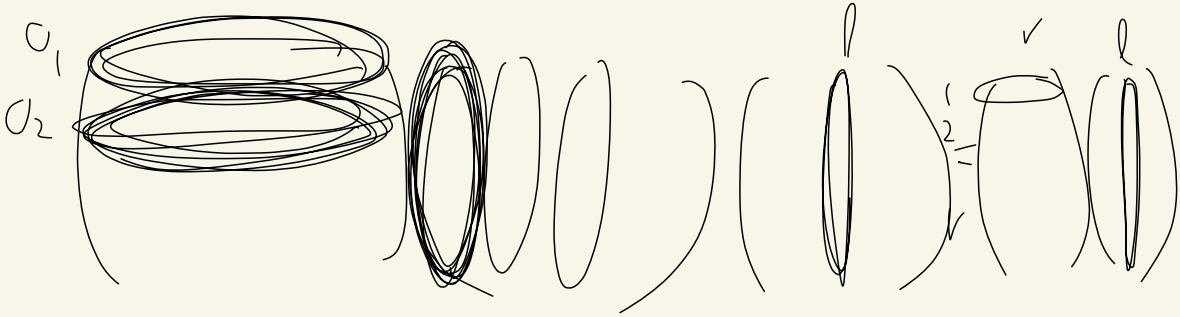
$$\downarrow \quad \downarrow$$

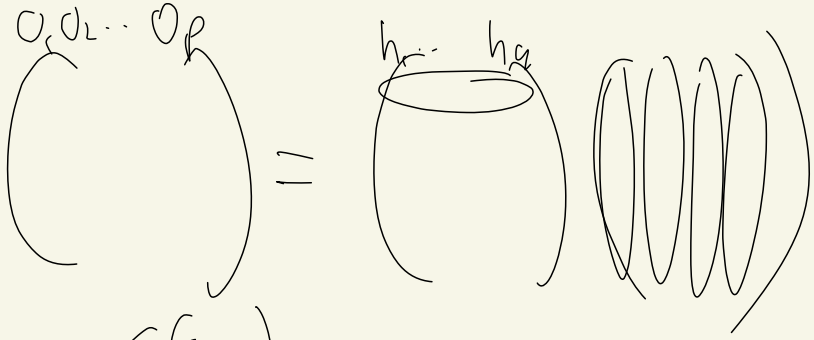
$$w_{rl} \times \sigma'(z_k) \times$$

$l = 1$

$$O_2 = w\ h_1 + w\ h_2 + w h_3 + w h_4 + \cdots + w\ h_q$$

$$O_l = w_{1l} h_1 + w_{2l} h_2 + w_{3l} h_3 + w_{4l} h_4 + \cdots + w_{ql} h_q$$

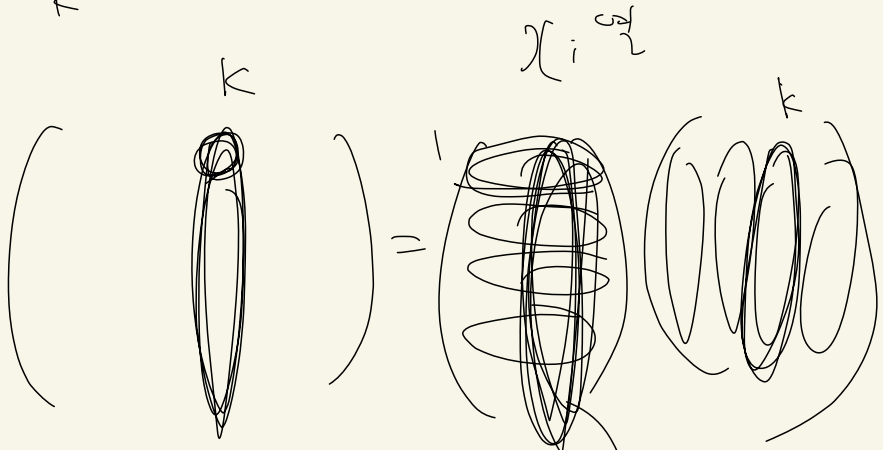




$$h_r = \sigma(z_r)$$

$x_1 w_k$

$Z_k =$



$$Z_k = W_{1k}x_{11} + W_{21k}x_{12} + W_{31k}x_{13} + \cdots W x_{1p}$$

$$W_{2k}x_{21} + W_{22k}x_{22} + W_{32k}x_{23} + \cdots W x_{2p}$$

$$W x_{q1} + W x_{q2} + \cdots$$

$$\frac{\partial L}{\partial W_{ij}^{(l)}} = \sum_{l,r,k} \frac{\partial C}{\partial O_k} \times \frac{\partial O_k}{\partial h_r} \times \frac{\partial h_r}{\partial z_k} \times \frac{\partial z_k}{\partial w_{ij}}$$

W_{rk} W_{rl} $\sigma(z_k)$ x_i

$O_k = W h_r + b$

$O =$

$h_r = \sigma(z_k)$