

$$\begin{aligned}
\frac{\partial R}{\partial w_{kl}} &= \frac{1}{N} \sum_n \left[\frac{\partial \frac{1}{2} (y_n - g(a_{l,n}))^2}{\partial a_{l,n}} \right] \left[\frac{\partial z_{k,n} w_{kl}}{\partial w_{kl}} \right] = \frac{1}{N} \sum_n \left[-(y_n - z_{l,n}) g'(a_{l,n}) \right] z_{k,n} \\
&= \frac{1}{N} \sum_n \delta_{l,n} n z_{k,n}
\end{aligned}$$