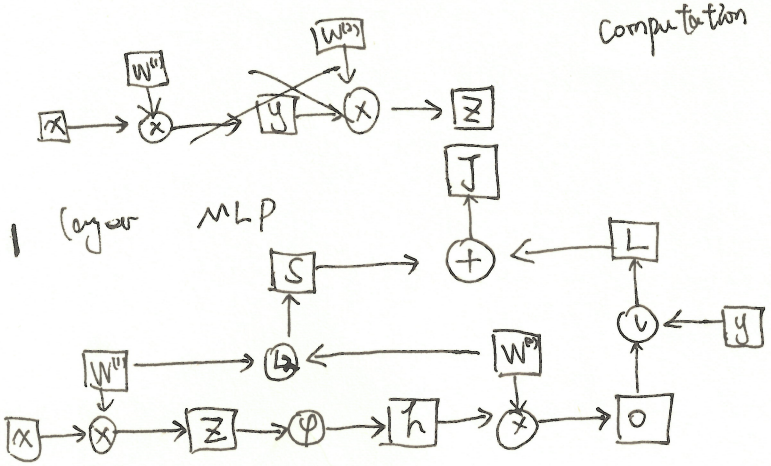
Computation Graph IIE fucas



$$\left(\frac{\partial J}{\partial s} * \frac{\partial s}{\partial L}\right) \quad \left(\frac{\partial s}{\partial w^{(1)}}; \frac{\partial s}{\partial w^{(2)}}\right) \quad \frac{\partial L}{\partial o} \quad \left(\frac{\partial o}{\partial w^{(2)}}, \frac{\partial o}{\partial h}\right) \quad \frac{\partial h}{\partial z} \quad \frac{\partial z}{\partial w^{(1)}}$$

$$\Delta w^{(1)} = \frac{\partial J}{\partial s} * \frac{\partial s}{\partial w^{(1)}} + \frac{\partial J}{\partial L} * \frac{\partial L}{\partial o} * \frac{\partial o}{\partial h} * \frac{\partial h}{\partial z} * \frac{\partial z}{\partial w^{(1)}} \quad \checkmark$$

$$\Delta w^{(1)} = \frac{\partial J}{\partial s} * \frac{\partial s}{\partial w^{(1)}} + \cdots$$

$$\Delta w^{(2)} = \frac{\partial J}{\partial s} * \frac{\partial s}{\partial w^{(2)}} + \frac{\partial J}{\partial L} * \frac{\partial L}{\partial o} + \frac{\partial o}{\partial w^{(2)}} \quad \checkmark$$

My Algorithm:

① build a tree

② label w (need to cal grad)

③ calculation

④ get the grad expression of w which need to cal grad.

forward: 计算中间变量和参数(模型参数)的值

back-ward: 计算中间变量和模型参数的梯度.