Thomas Floquet

TP 1

AMAL
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1. $\frac{\partial L \circ h}{\partial x_i}(x) = \sum_{j=1}^{p} (\nabla L)_j \frac{\partial h_j}{\partial x_i}(x)$
2. $\frac{\partial L \circ mse}{\partial y}(\hat{y}, y) = \frac{\partial L \circ mse}{\partial mse}(\hat{y}, y) * 2(\hat{y} - y)$

   $\frac{\partial L \circ f}{\partial x_j}(x, w, b) = \frac{\partial L}{\partial \hat{y}}(\hat{y}) * w_j$
3. $\frac{\partial L \circ f}{\partial X_{ij}}(X, W, b) = \sum_{k=1}^{p} \frac{\partial L}{\partial \hat{Y}_{ik}}(\hat{Y}) * W_{jk}$

   $\frac{\partial L \circ f}{\partial W_{ij}}(X, W, b) = \sum_{k=1}^{q} \frac{\partial L}{\partial \hat{Y}_{kj}}(\hat{Y}) * X_{ki}$

   $\frac{\partial L \circ f}{\partial b_i}(X, W, b) = \sum_{k=1}^{q} \frac{\partial L}{\partial \hat{Y}_{ki}}(\hat{Y})$
4. $\frac{\partial L \circ mse}{\partial Y}(\hat{Y}, Y) = \nabla L * \frac{2}{q}(Y - \hat{Y})$

   $\frac{\partial L \circ mse}{\partial \hat{Y}}(\hat{Y}, Y) = \nabla L * (-\frac{2}{q}(Y - \hat{Y}))$

   $\frac{\partial L \circ f}{\partial X}(X, W, b) = \nabla L * W^T$

   $\frac{\partial L \circ f}{\partial X}(X, W, b) = X^T * \nabla L$

   $\frac{\partial L \circ f}{\partial b}(X, W, b) = \nabla L$
5. $\frac{\partial C}{\partial W} = \frac{2}{q} X^T (\hat{Y} - Y)$

   $\frac{\partial C}{\partial b} = \frac{2}{q}(\hat{Y} - Y)$