Pseudo labeling Steps:

small_data_label
large_data_label

Model

- 2 Layers
- Dropout (0.20)
- Define $\alpha(t)$ function

Steps:

- Train model on small dataset of labeled data
- save the loss value for labeled data
- Define $\alpha(t)$ function as follows:

$$\alpha(t) = \begin{cases} 0 & t < T_1 \\ \frac{t-T_1}{T_2-T_1}\alpha_f & T_1 \le t < T_2 \\ \alpha_f & T_2 \le t \end{cases}$$

- Perform foward pass to get pseudo labels
- Carculate loss for unlabeled data and multiply by $\alpha(t)$

Overall loss

$$L = \frac{1}{n}\sum_{m=1}^{n}\sum_{i=1}^{C} L(y_i^m, f_i^m) + \alpha(t)\frac{1}{n'}\sum_{m=1}^{n'}\sum_{i=1}^{C} L(y_i'^m, f_i'^m)$$

labeled loss — unlabeled loss

- Backpropogate
- Retrain the model as usual using pseudo labels and labeled data
- Test model with unseen data