1 Full Training Algorithm

Algorithm 1 Full training algorithm.

1: Require: Source domain $D_s = \{1, 2, \ldots, K_s\}$, novel domain $D_n = \{1, 2, \ldots, K_n\}$, task model $F$, generator $G$, max iteration $T$, pre-trained classifier $\hat{Y}$.
2: for $t = 1$ to $T$ do
3: Sample a mini-batch $X_k$ from each source domain $k \in D_s$.
4: Generate $X_\tilde{k} = G(X_k, \tilde{k})$ with $\tilde{k} \sim D_n$ for each source $k$.
5: Compute $L_G$.
7: Compute $L_F$.
8: Perform one step gradient update for $F$ using $\nabla_F L_F$.
9: end for