Input: Target f^* , initial f^0 , per-iteration pack size k, small constant $\epsilon > 0$ and maximal iteration number T. Set $f^t \leftarrow f^0$, t = 0. while $t \leq T$ and $||f^t - f^*||_{\mathcal{H}} > \epsilon$ do

Algorithm 1 Random / Greedy Functional Teaching

The teacher selects k teaching examples:

Initialize the pack of teaching examples $\mathcal{K} = \emptyset$; for j = 1 to k do

(RFT) 1. Pick
$$x_j^{t*} \in \mathcal{X}$$
 randomly;

end

(**GFT**) 1. Pick
$$x_j^t \in \mathcal{X}$$
 randomly;
(**GFT**) 1. Pick x_j^{t*} with the maximal difference

$$\boldsymbol{x_{j}^{t}}^{*} = \underset{\boldsymbol{x_{i}^{t} \in \mathcal{X} - \left\{\boldsymbol{x_{i}^{t}}^{*}\right\}_{i=1}^{j-1}}{\arg\max} \left| f^{t}(\boldsymbol{x}_{i}^{t}) - f^{*}(\boldsymbol{x}_{i}^{t}) \right|;$$

$$egin{align*} oldsymbol{x}_j &= limbol{limbol{a}} limbol{limbol{a}} limbol{limbol{a}} limbol{limbol{a}} limbol{limbol{a}} egin{align*} limbol{limbol{a}} \left. \left| \left. \int \left(oldsymbol{x}_i
ight) - J \left(oldsymbol{x}_i
ight)
ight|, \ oldsymbol{x}_i^t \in \mathcal{X} - \left\{ oldsymbol{x}_i^{t*} \right\}_{i=1}^{j-1} \end{array}$$

$$oldsymbol{x}_i^\iota \in \mathcal{X} - \{oldsymbol{x}_i^{\iota^*}\}_{i=1}^{I-1}$$

2. Add
$$(\boldsymbol{x}_{j}^{t*}, y_{j}^{t*} = f^{*}(\boldsymbol{x}_{j}^{t*}))$$
 into \mathcal{K} .

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$$(\boldsymbol{x}_{j}^{t\,*}, y_{j}^{t\,*} = f^{*}\left(\boldsymbol{x}_{j}^{t\,*}\right))$$
 into \mathcal{K} .

2. Add
$$(\boldsymbol{x}_{j}^{e}, y_{j}^{e} = f^{*}(\boldsymbol{x}_{j}^{e}))$$
 into \mathcal{K} .

end

Provide \mathcal{K} to learners.

end
Provide
$$\mathcal{K}$$
 to learners.

Provide
$$K$$
 to learners.

The learner updates f^t based on received K :

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$$f^t$$
 based on received \mathcal{K} :
 $f^t \leftarrow f^t - n^t \mathcal{G}(\mathcal{L}; f^t; \mathcal{K}).$

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Set $t \leftarrow t + 1$.