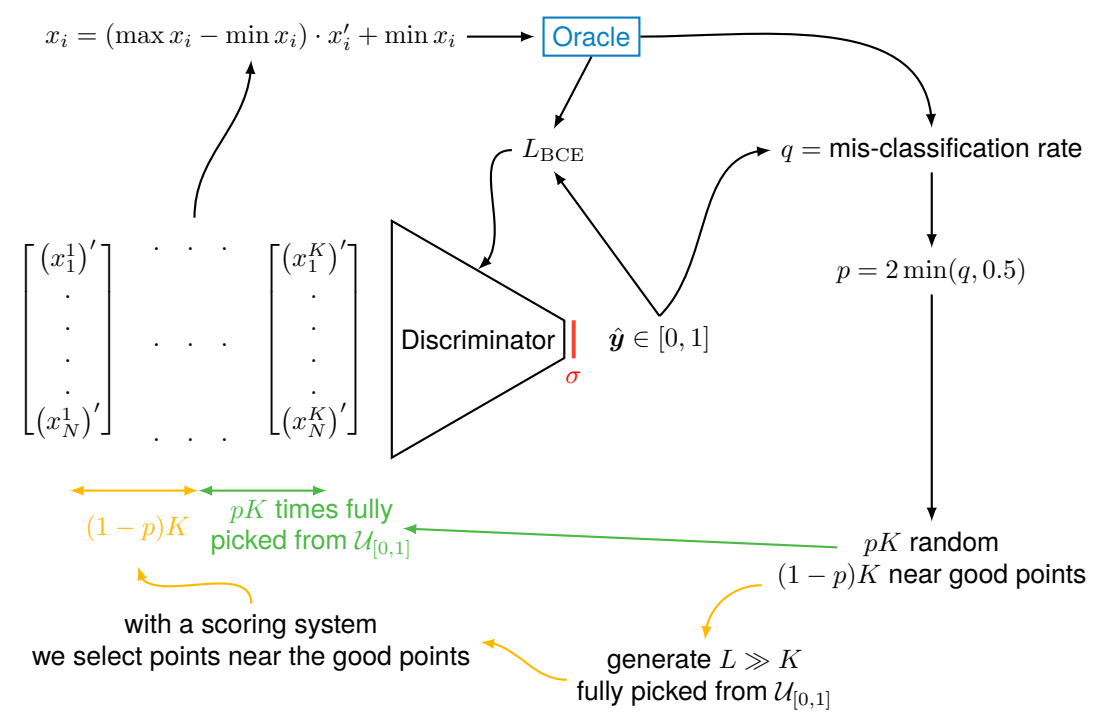

$x_i = (\max x_i - \min x_i) \cdot x_i' + \min x_i$
Oracle
$L_{\mathrm{BCE}}$
$q =$ mis-classification rate
$p = 2\min(q, 0.5)$
$\begin{bmatrix} (x_1^1)' & \cdots & (x_1^K)' \\ \vdots & & \vdots \\ (x_N^1)' & \cdots & (x_N^K)' \end{bmatrix}$
Discriminator
$\sigma$
$\hat{\boldsymbol{y}} \in [0, 1]$
$(1-p)K$
$pK$ times fully picked from $\mathcal{U}_{[0,1]}$
$pK$ random
$(1-p)K$ near good points
with a scoring system
we select points near the good points
generate $L \gg K$
fully picked from $\mathcal{U}_{[0,1]}$