



POPULATION

Feature Type &
Distribution

New users

  $x \in \mathcal{X}$
 $n_t \in \mathcal{N}^+$

BLACK-BOX CLASSIFIER

User score: $f : \mathcal{X} \rightarrow [0, 1]$

Positive Outcome: $x_t^k \in P_t^k$

COUNTERFACTUAL RECOURSE

$$\forall x_t \in L_t, r(x_t) = x'$$

ADAPTATION DYNAMIC

$$\forall x_t \in L_t, \\ a(x_t, r(x_t)) = a(x_t, x') = x_{t+1}$$

