

Structural Equations :

(Hidden Confounder) $U \sim \mathcal{N}(\mu_e, 0.5^2)$

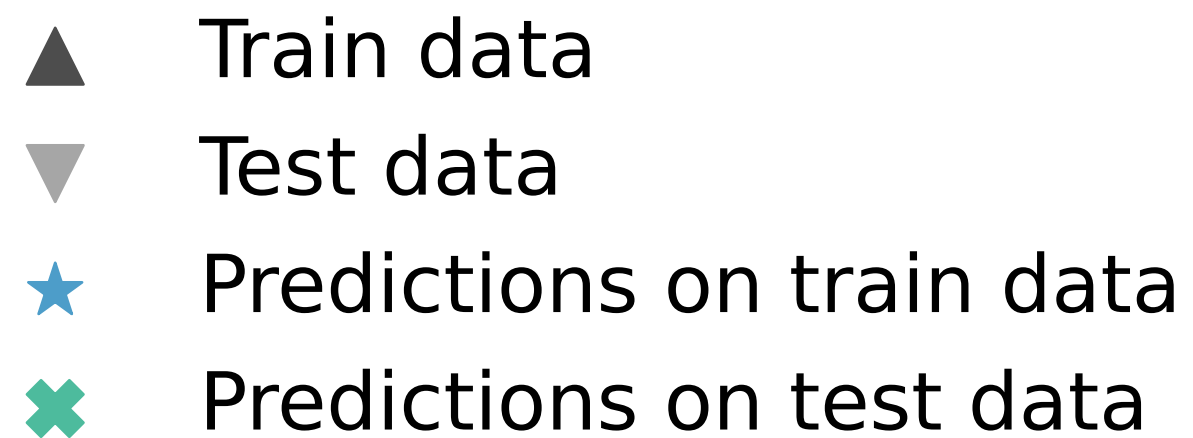
$\mu_e \in \{-1, 0\}$ for ID

$\mu_e \in \{-0.5, 0.5\}$ for OOD

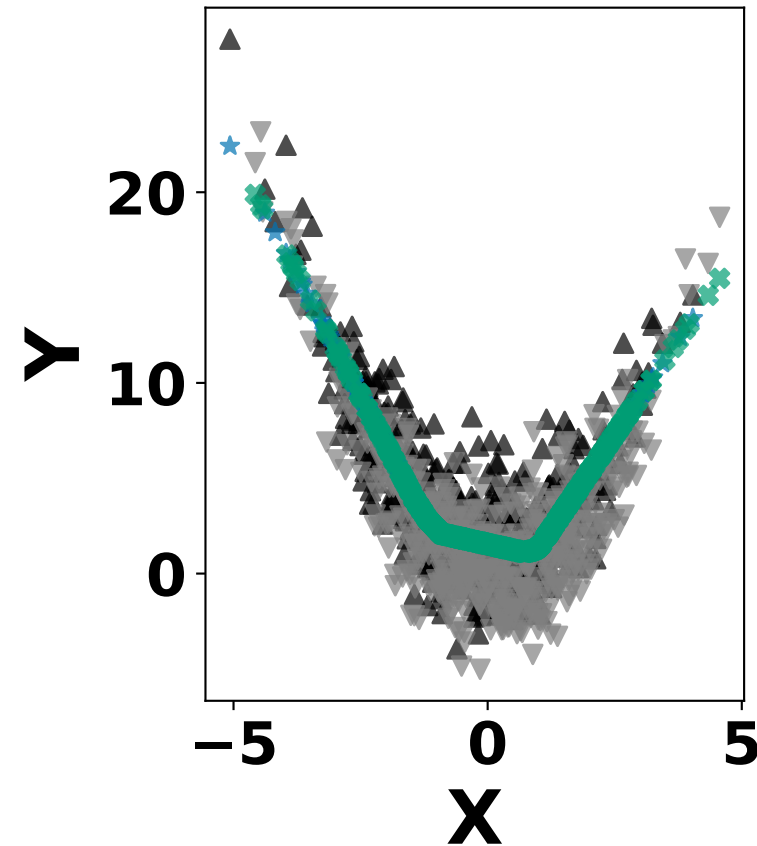
(Input) $X = 0.75 U + \mathcal{N}(0, 1.5^2)$

(Outcome) $Y = X^2 - 3U + \mathcal{N}(0, 0.5^2)$

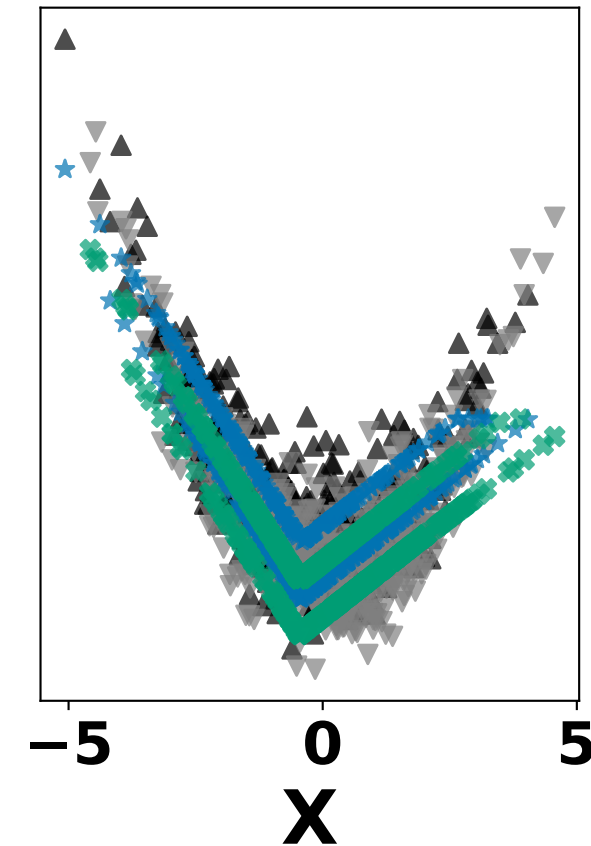
(Informative) $X_i = 0.6 U + \mathcal{N}(0, 0.3^2)$



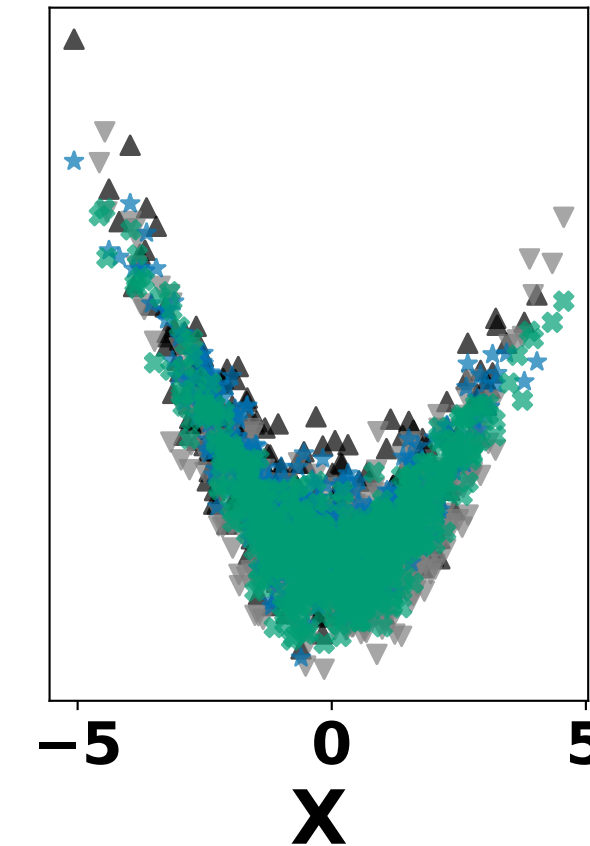
MLP Using X
Train MSE: 4.7
Test MSE: 6.6



MLP Using X, E
Train MSE: 3.5
Test MSE: 4.6



MLP Using X, X_i
Train MSE: 1.9
Test MSE: 2.5



MLP Using X, U (Oracle)
Train MSE: 0.4
Test MSE: 0.5

