

# Permutation Importance on Tabular Data

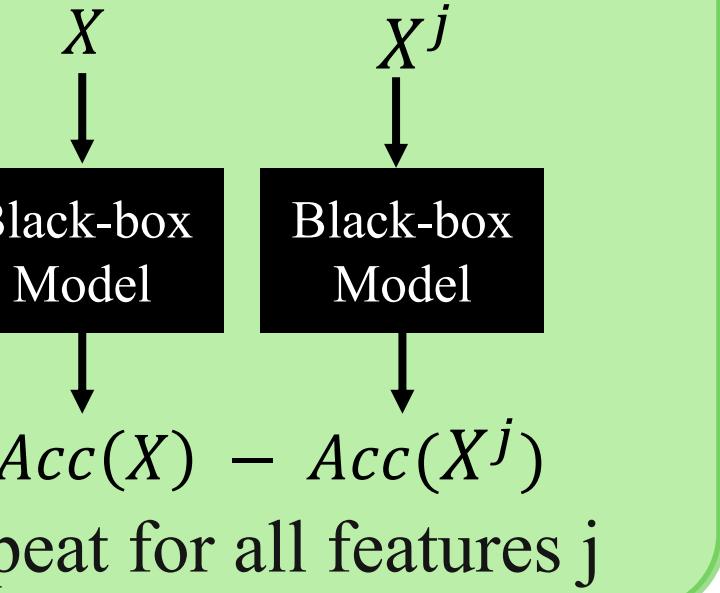
$X$  = original data

person	couch	table
1	0	1
1	0	1
0	1	1

$X^j$  = permute column  $j$

person	couch	table
0	0	1
1	0	1
1	1	1

## Permutation Importance



# Diffusion-Enabled Image Permutation Importance

Original text

$$\mathbf{c} = \begin{bmatrix} \text{"Person: 1, couch: 0, table: 1, cup: 0"} \\ \text{"Person: 1, couch: 0, table: 1, cup: 0"} \\ \text{"Person: 0, couch: 1, table: 1, cup: 0"} \end{bmatrix}$$

Diffusion Model



$$a' =$$

Permute concept  $j$  in text

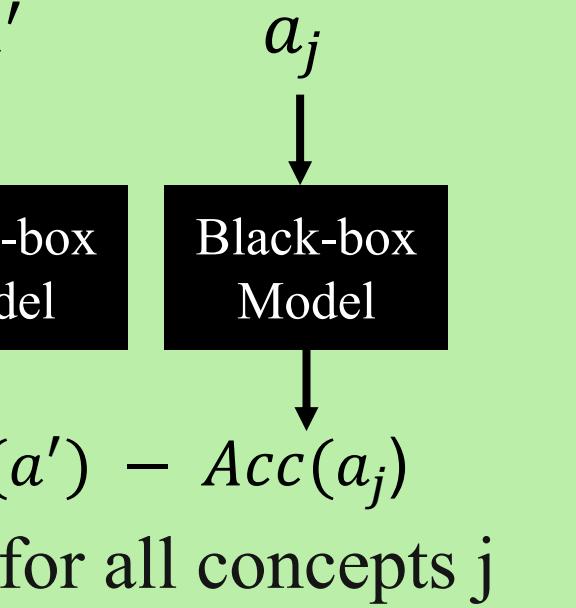
$$\mathbf{c}^j = \begin{bmatrix} \text{"Person: 0, couch: 0, table: 1, cup: 0"} \\ \text{"Person: 1, couch: 0, table: 1, cup: 0"} \\ \text{"Person: 1, couch: 1, table: 1, cup: 0"} \end{bmatrix}$$

Diffusion Model

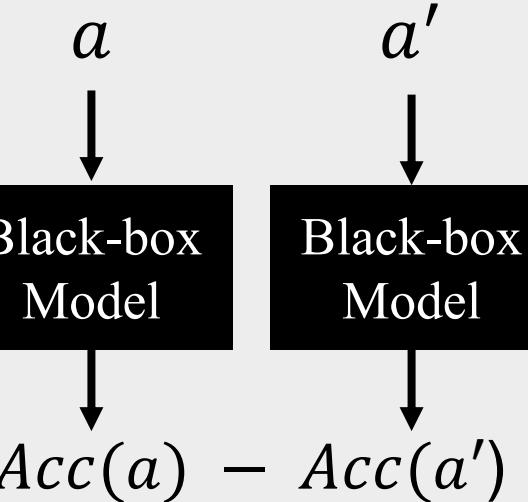


$$a_j =$$

## Permutation Importance



## Check #1: effective generation



## Check #2: independent permutation

