Back to the learning diagram

The bin analogy:

UNKNOWN TARGET FUNCTION
$f: \mathcal{X} \to \mathcal{Y}$

PROBABILITY DISTRIBUTION
P on $\mathcal{X}$

TRAINING EXAMPLES
$(\mathbf{x}_1, y_1), \ldots, (\mathbf{x}_N, y_N)$

$\mathbf{x}_1, \ldots, \mathbf{x}_N$

LEARNING ALGORITHM
$\mathcal{A}$

FINAL HYPOTHESIS
$g \approx f$

HYPOTHESIS SET
$\mathcal{H}$