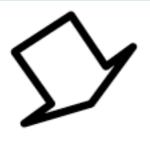Hypotheses $\mathcal{H}$

$$h : \mathcal{X} \mapsto \mathcal{Y}$$

Labeled data

$$(\mathbf{x}^{(i)}, \mathbf{y}^{(i)})$$

Learning

find $h \in \mathcal{H}$

s.t. $\mathbf{y}^{(i)} \approx h(\mathbf{x}^{(i)})$

Prediction

$$\mathbf{y} = h(\mathbf{x})$$

New data

$$\mathbf{x}$$