

Size (feet ²)	Price (\$1000)	Bedrooms	Linear regression
2104	400	3	
1416	232	2	
1534	315	3	
852	178	3	

price

Size →

Training Set

Learning Algo.

How do you represent h ?

$$h(x) = \theta_0 + \theta_1 x$$

Size → h funcⁿ → estimated price 2 parallel feature

h hypothesis funcⁿ

$$h(x) = \theta_0 + \theta_1 x_1 + \theta_2 x_2$$

$x_1 = \text{size}$ 3rd feature

$x_2 = \# \text{ bedrooms}$

$$h(x) = \sum_{j=0}^n \theta_j x_j$$

where, $X_0 = 1$

for n parameters
or $n+1$ features

$x = \text{"Inputs" / features}$ $\theta = \text{parameters}$ $h(x) = \sum_{j=0}^n \theta_j x_j$

$y = \text{"Output"}$ $m = \# \text{ training examples}$
Target variable
(# rows in table above)

$(x, y) = \text{training example}$

$n = \# \text{ features}$

$$\theta = \begin{bmatrix} \theta_0 \\ \theta_1 \\ \theta_2 \end{bmatrix} \quad x = \begin{bmatrix} x_0 \\ x_1 \\ x_2 \end{bmatrix}$$

for n features there are $n+1$ parameters (θ)