Linear Regression with multiple variables

Features and polynomial regression

Machine Learning

Housing prices prediction

$$h_\theta(x) = \theta_0 + \theta_1 \times \boxed{frontage} + \theta_2 \times \boxed{depth}$$
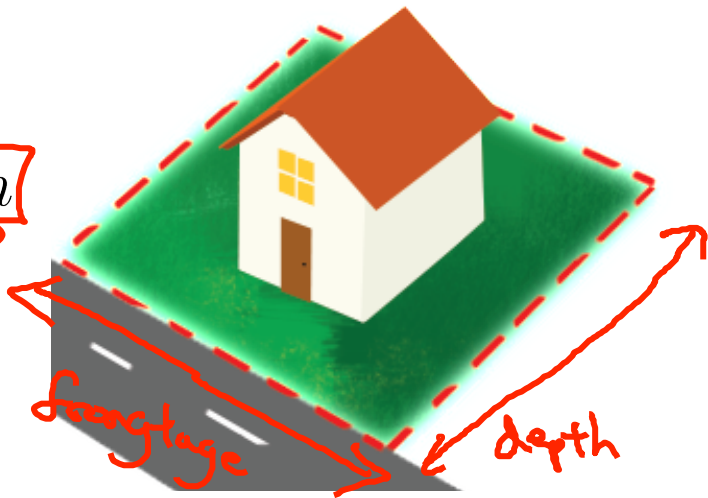
a area é que determina o preço da casa!

$$x_1$$

$$x_2$$

Area

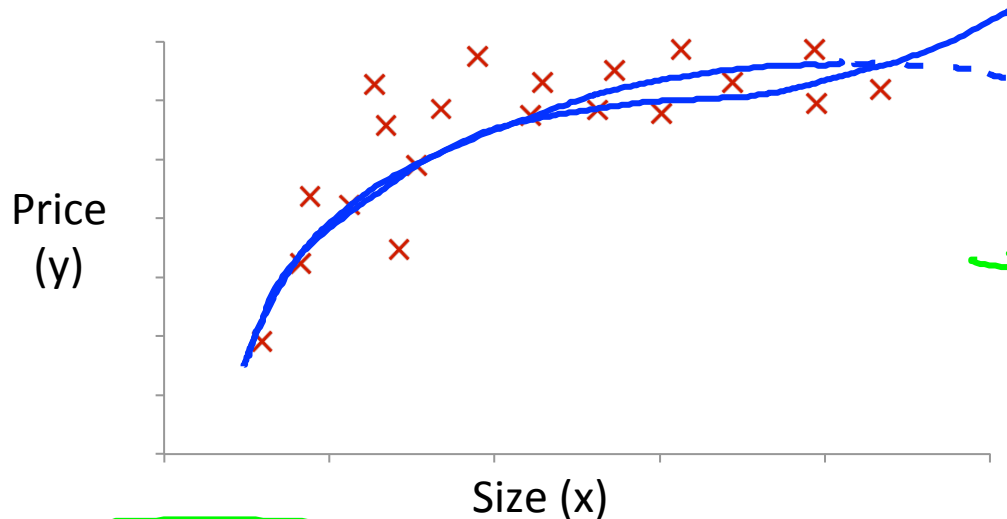$$x = frontage * depth$$

$$h_\theta(x) = \theta_0 + \theta_1 x$$

↰ land area

land area = frontage * depth

Polynomial regression

Price (y)

Size (x)

$$\theta_0 + \theta_1 x + \theta_2 x^2$$

$$\theta_0 + \theta_1 x + \theta_2 x^2 + \theta_3 x^3$$

$$h_\theta(x) = \theta_0 + \theta_1 x_1 + \theta_2 x_2 + \theta_3 x_3$$
$$= \theta_0 + \theta_1 (size) + \theta_2 (size)^2 + \theta_3 (size)^3$$

$x_1 = (size)$
$x_2 = (size)^2$
$x_3 = (size)^3$

Size: $1 - 1000$

Size^2: $1 - 1000,000$

Size^3: $1 - 10^9$

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Choice of features

Price
(y)

Size (x)
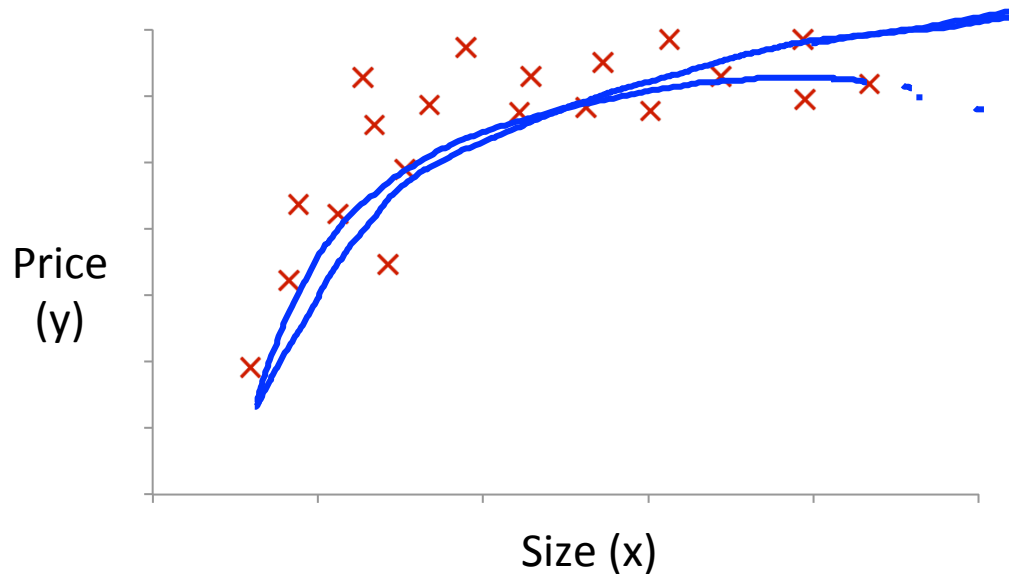
$$h_\theta(x) = \theta_0 + \theta_1 (size) + \theta_2 (size)^2$$

$$h_\theta(x) = \theta_0 + \theta_1 (size) + \theta_2 \sqrt{(size)}$$

funçao sqrt

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