Univariate Linear Regression

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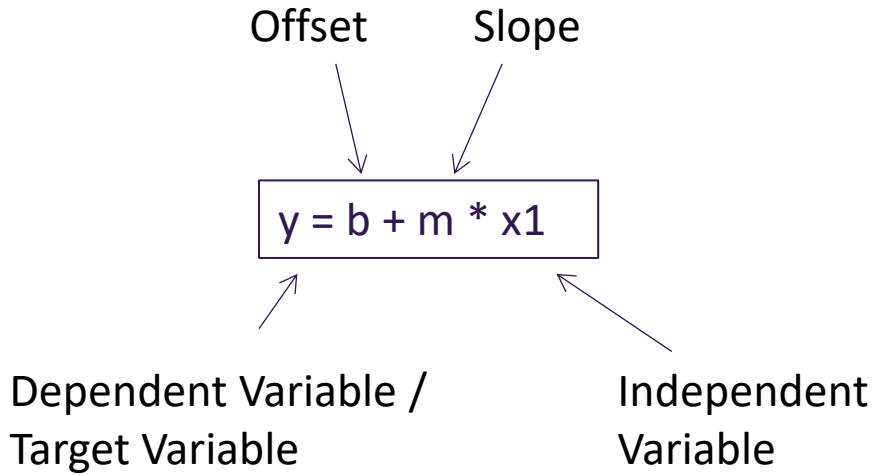
Univariate Linear Regression

Introduction



m
-slope parameter
-impact of change for one unit change of x1 on y

b
-offset parameter
-constant bias

Example: Housing-Market
Price = b + m * Size

Univariate Linear Regression

Best Fit

What is the best fit / trend line describing the points?

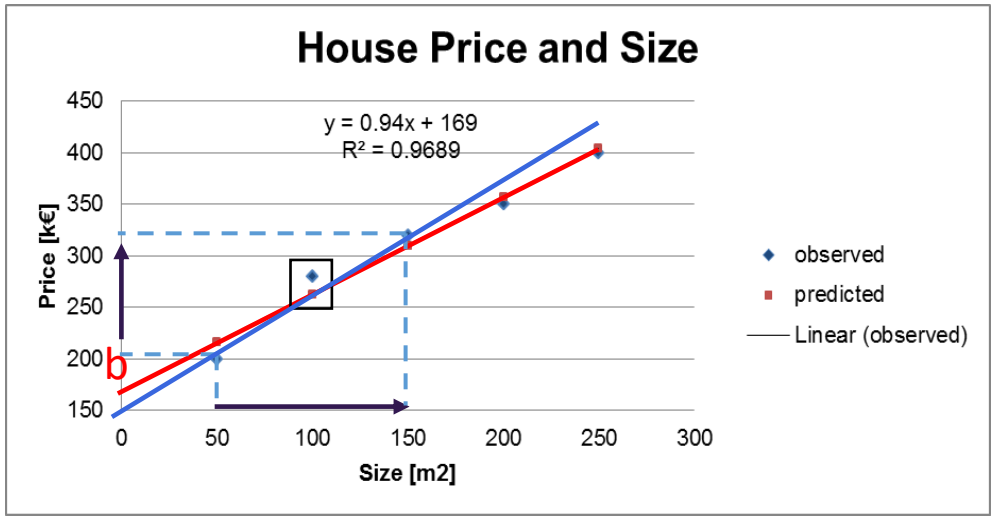
Price = b + m * Size

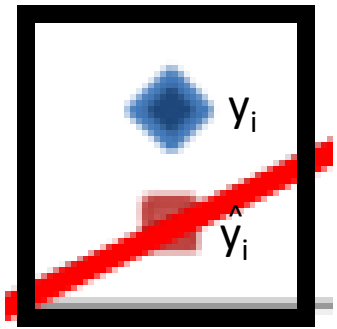
Univariate Linear Regression

Best Fit

What is the best fit / trend line describing the points?

m = ΔPrice / ΔSize
= (310k€-216k€) / (150-50) m^2
= 0.94 k€ / m^2





$$min \sum_{i=1}^{N} (y_i - \widehat{y_i})^2$$

Price = b + m * Size

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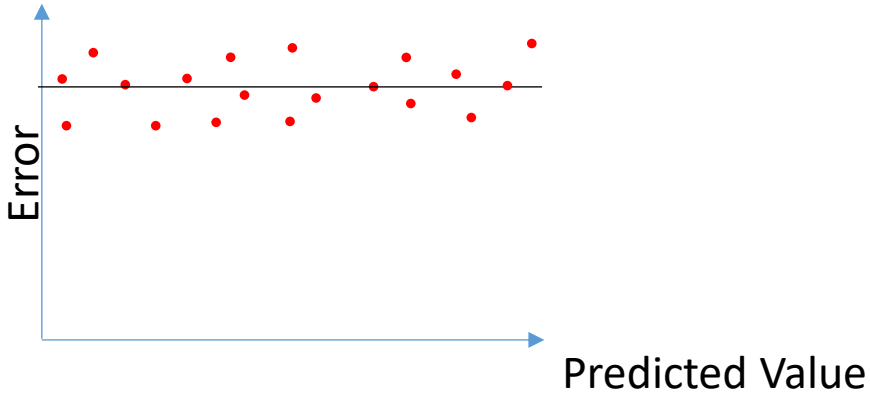
Model Assumptions

Model-Assumptions

- Linearity
- Homoscedasticity (errors show no pattern)



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Interactive