Multiple linear regression

Multiple features:

$x_j \to$ x sub j

$x_j = j^{Th}$ feature $\to j = 1, 2, 3, \dots, n$

n = number of features

$\vec{x}^{(i)}$ = features of i^{Th} Training example

$x_j^{(i)}$ = value of feature j in i^{Th} Training example

$\Rightarrow$ Model

↳ one feature $\to f_{w,b}(x) = wx + b$

↳ Multiple features $\to f_{w,b}(x) = w_1 x_1 + w_2 x_2 + \dots + w_n x_n + b$

$= f_{w,b}(\vec{x}) = \vec{w} \cdot \vec{x} + b$

dot product

الدائرة دة فيها ليت تعني قيمة
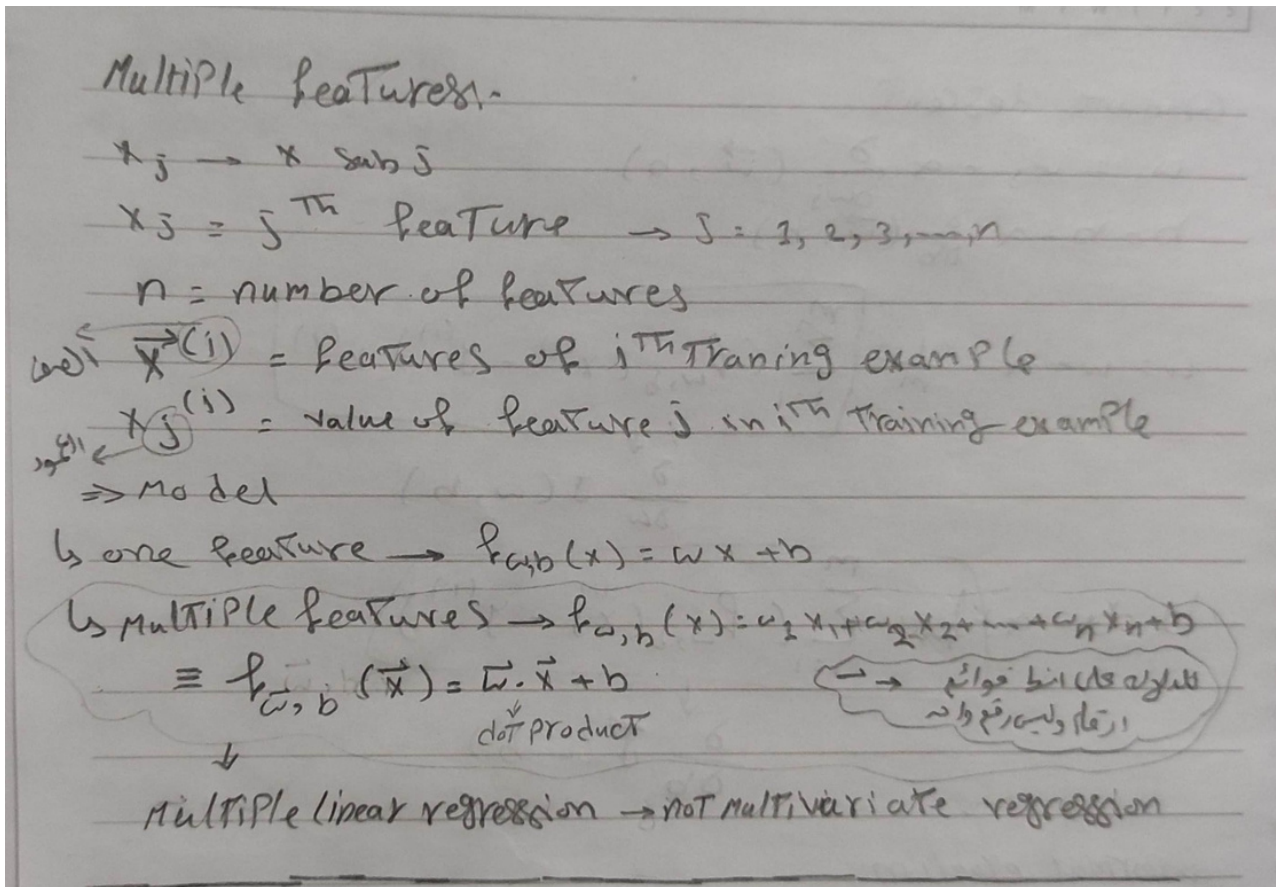ازاي وحسب ترتيبهم

Multiple linear regression → not Multivariate regression

Feature engineering

Feature engineering:
Using intuition to design
new features, by
transforming or combining
original features.