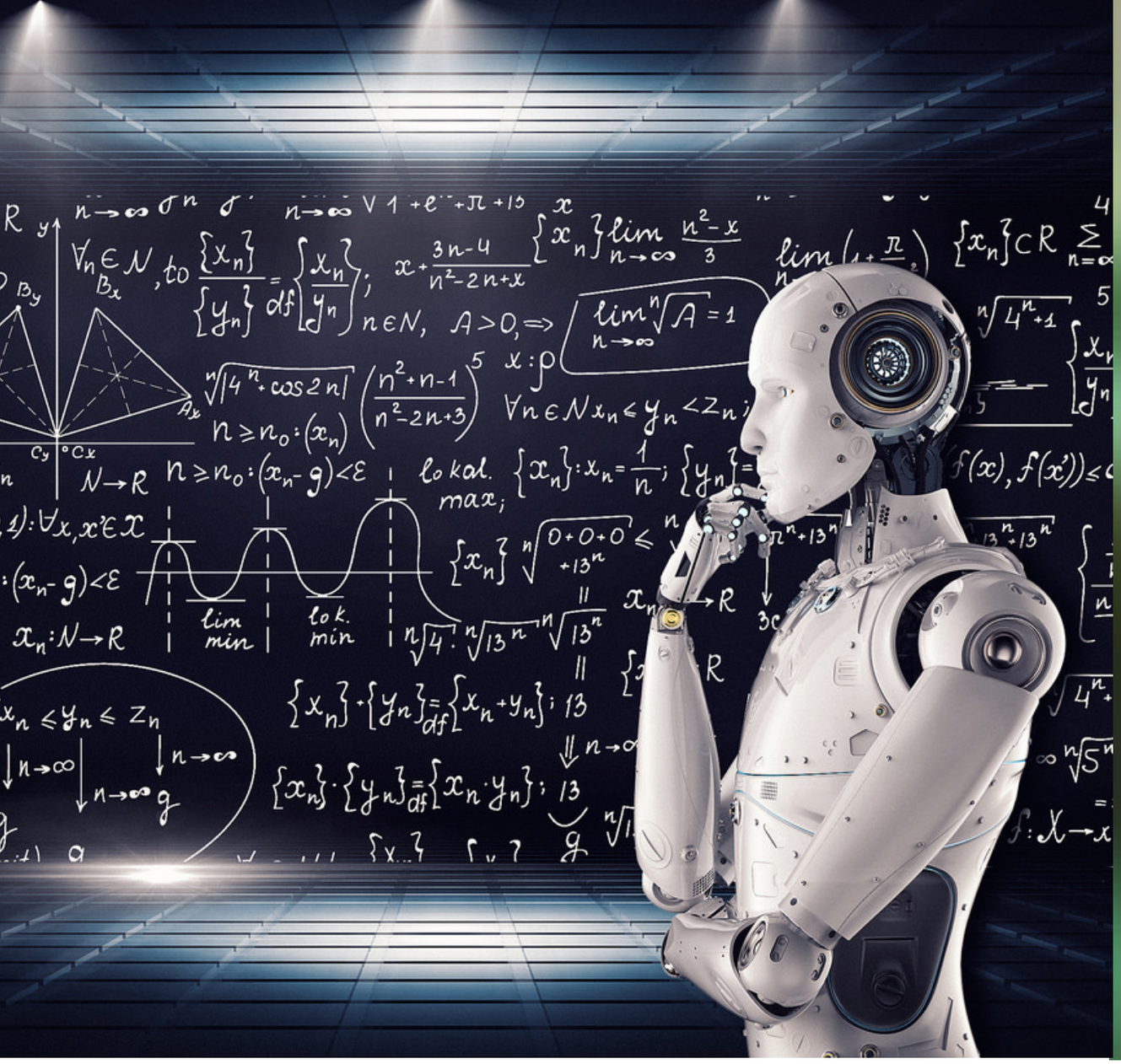

Cost Function-A Graphical Analysis(2D) 3D

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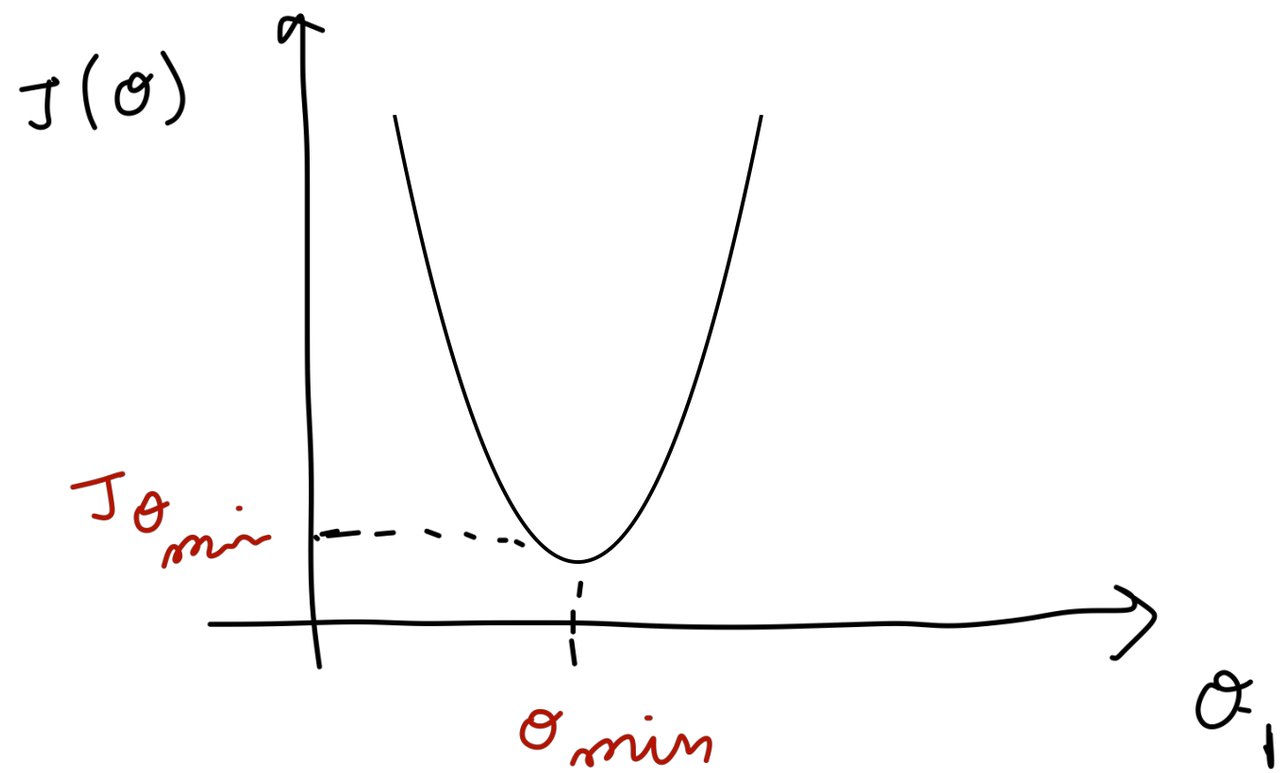
Recap



Hypothesis

$h_\theta = \theta_1 x$ | $\boxed{\theta_0 = 0}$

A General Two Dimensional Problem

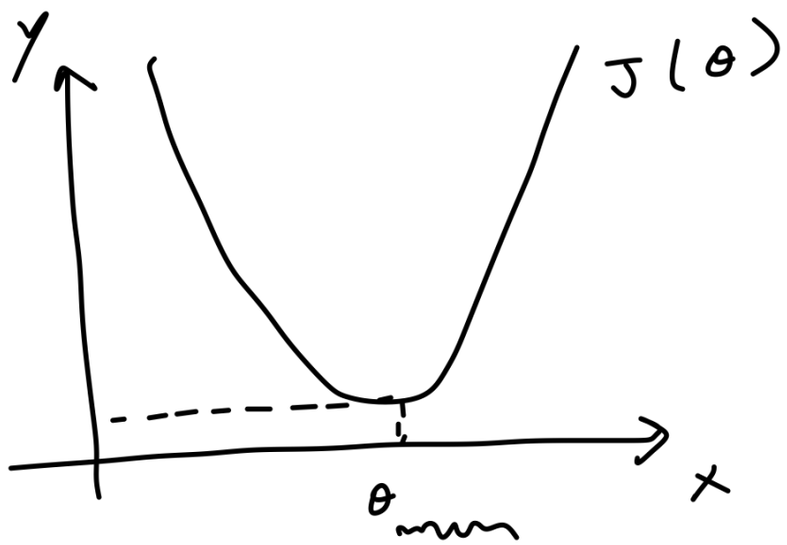
Given supervised learning problem

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

Cost/error function

$$J(\theta_0, \theta_1) = \frac{1}{2M} \sum \left[h_\theta(x^{(i)}) - y^{(i)} \right]^2$$

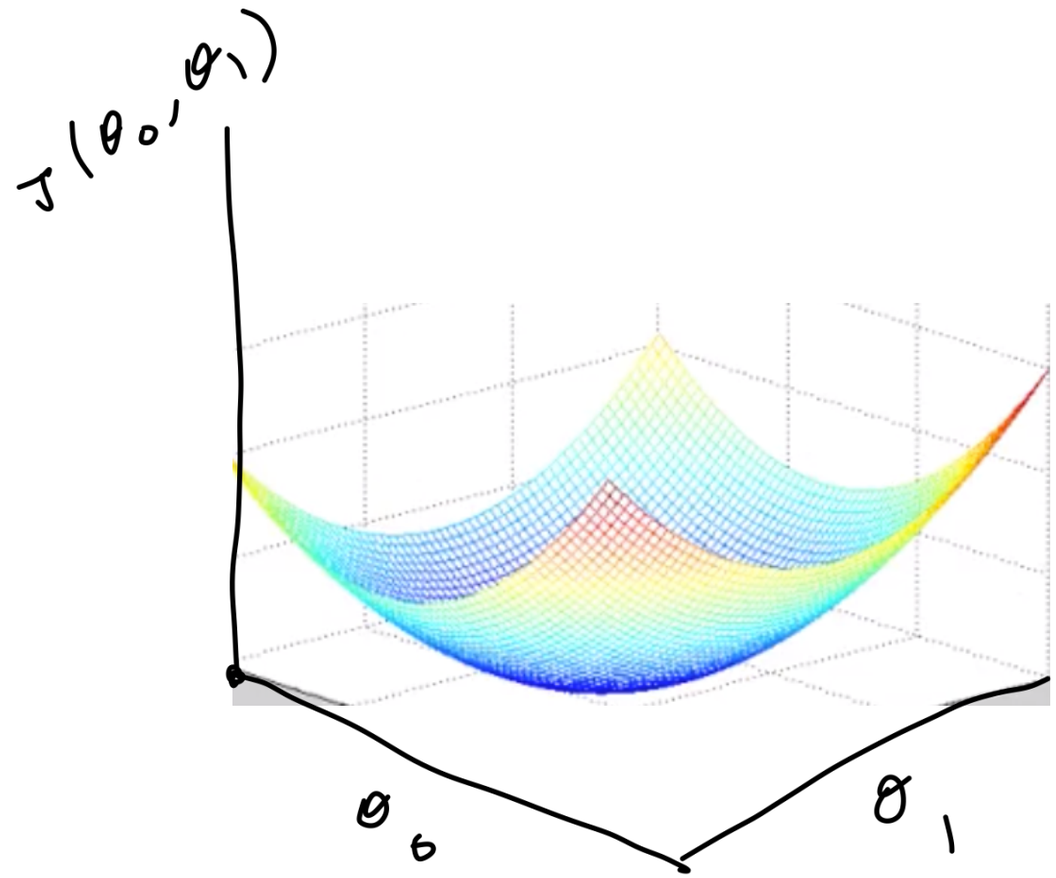
Aim Minimize $J(\theta_0, \theta_1)$



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

$J(\theta_1)$

2 - Dimension



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

$J(\theta_0, \theta_1)$

3 - Dimension

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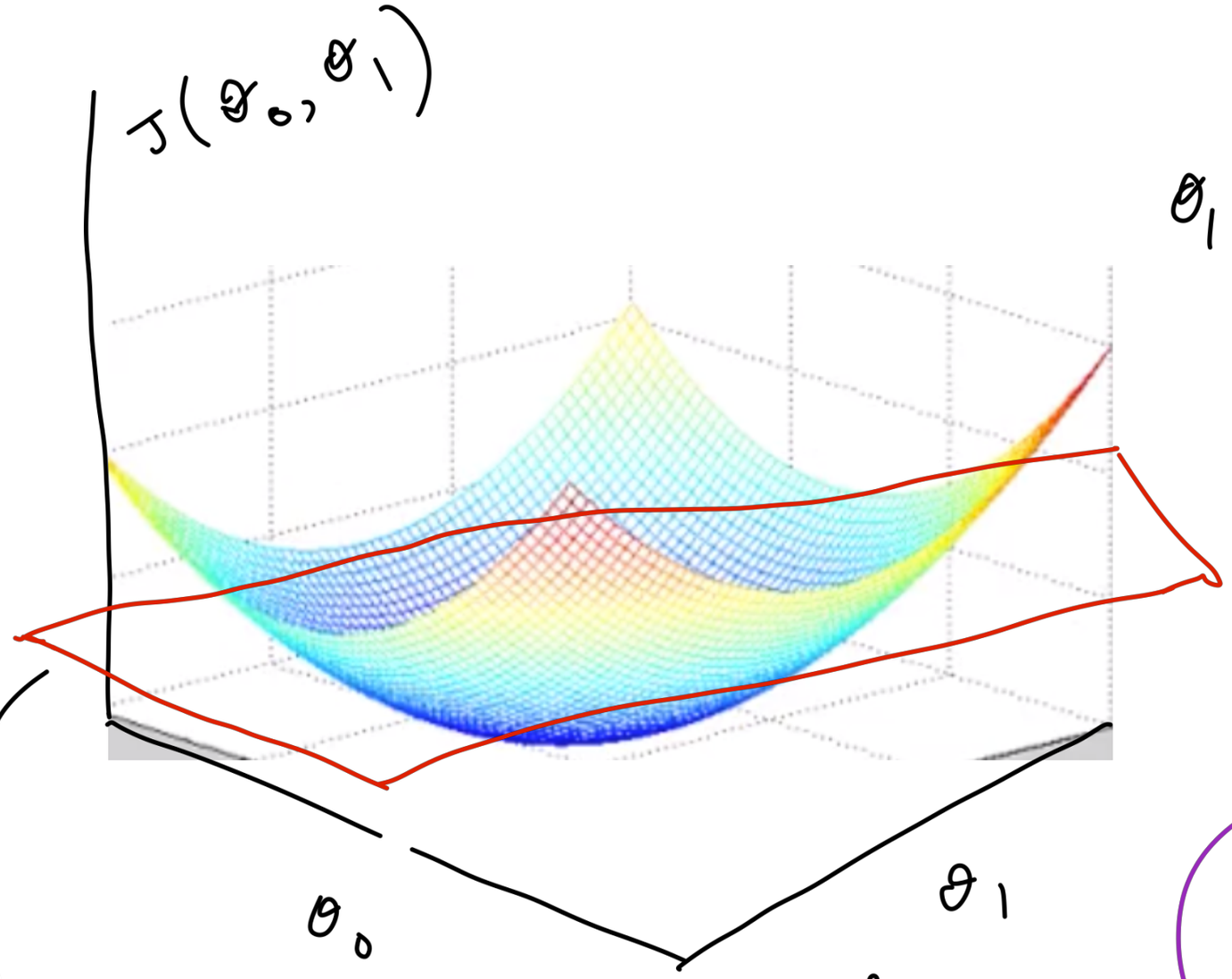
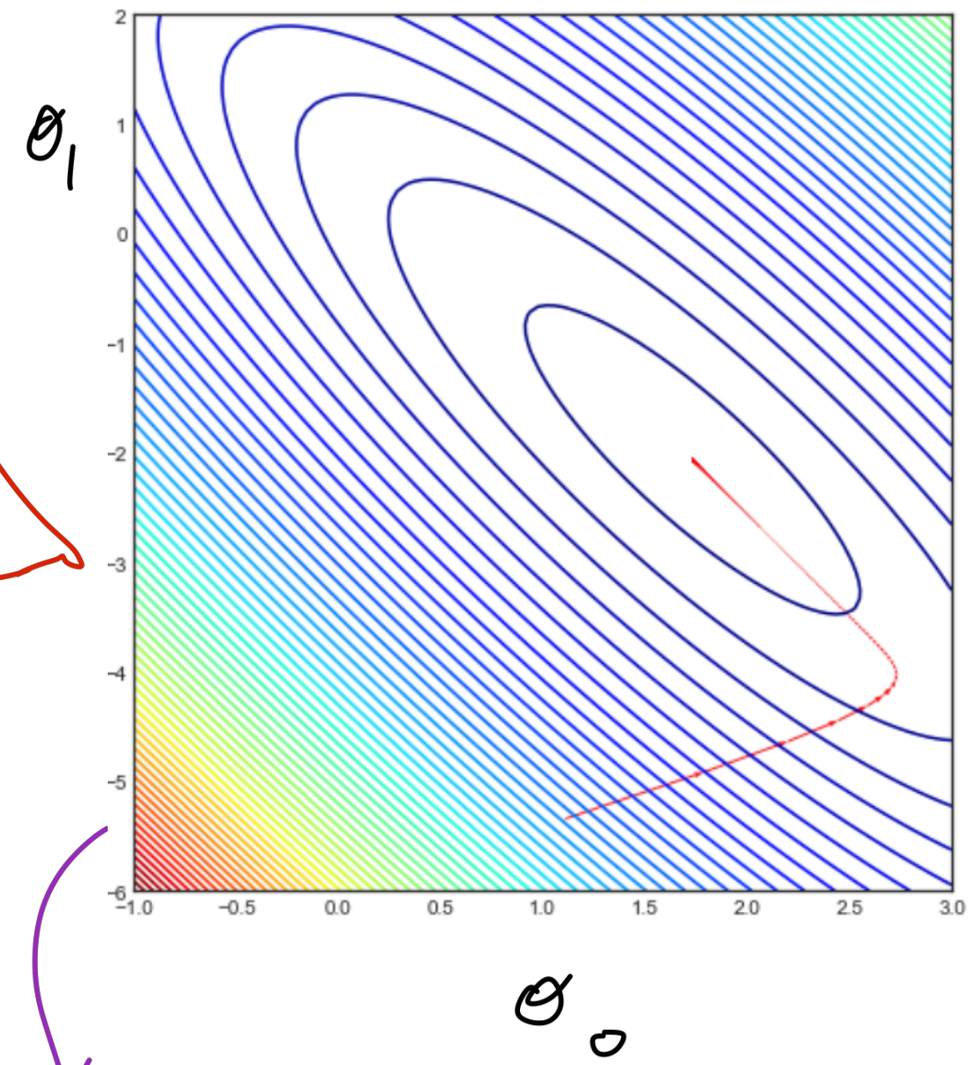
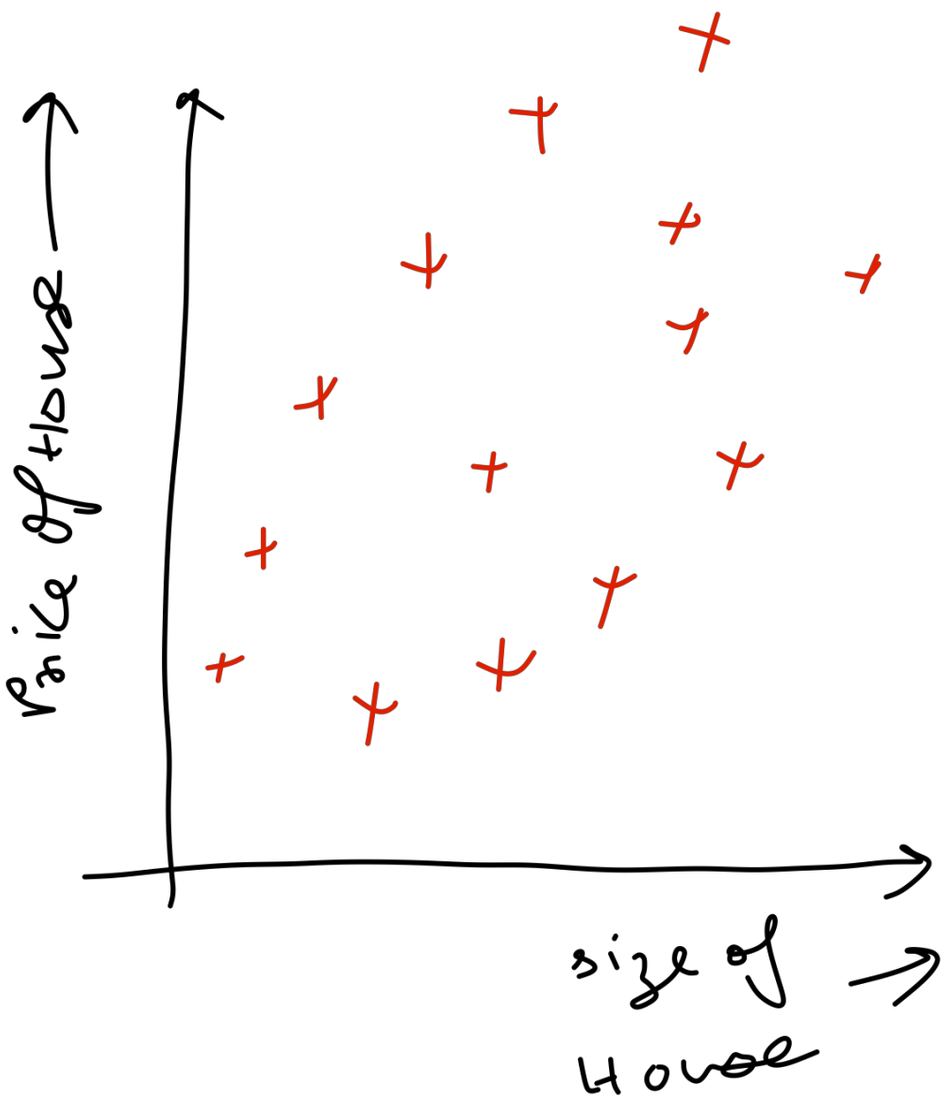
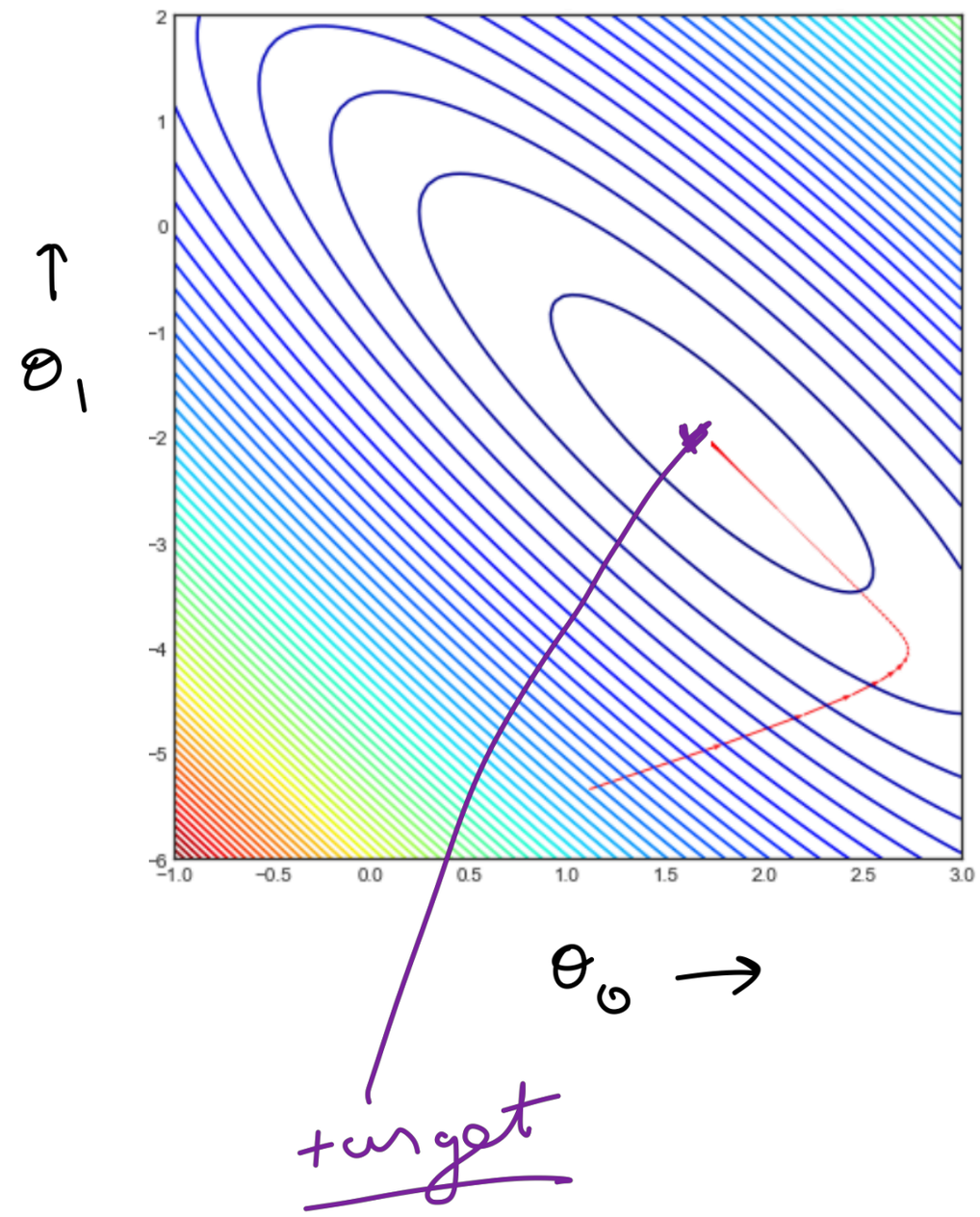


cut through this plane



contour plot





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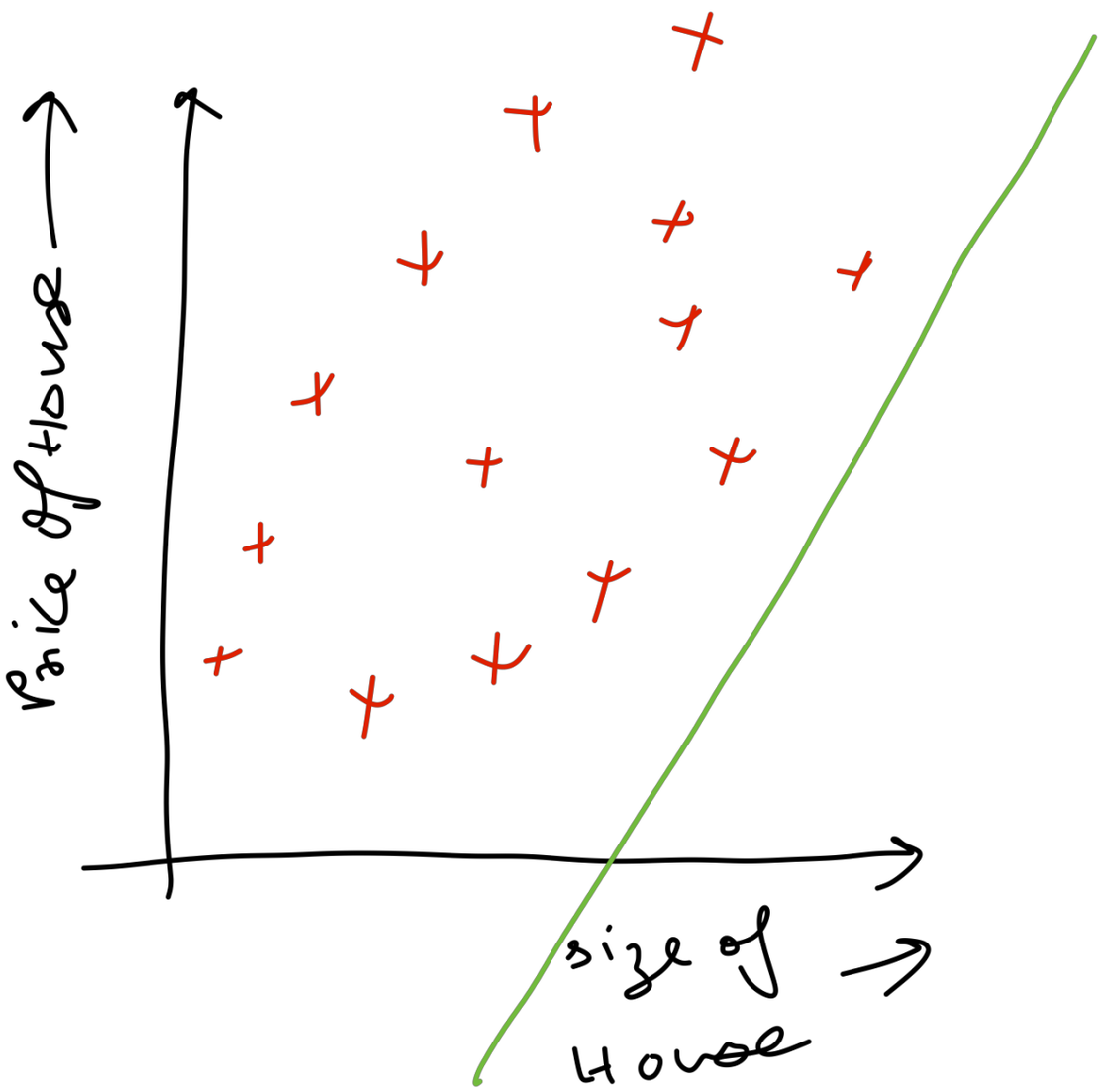

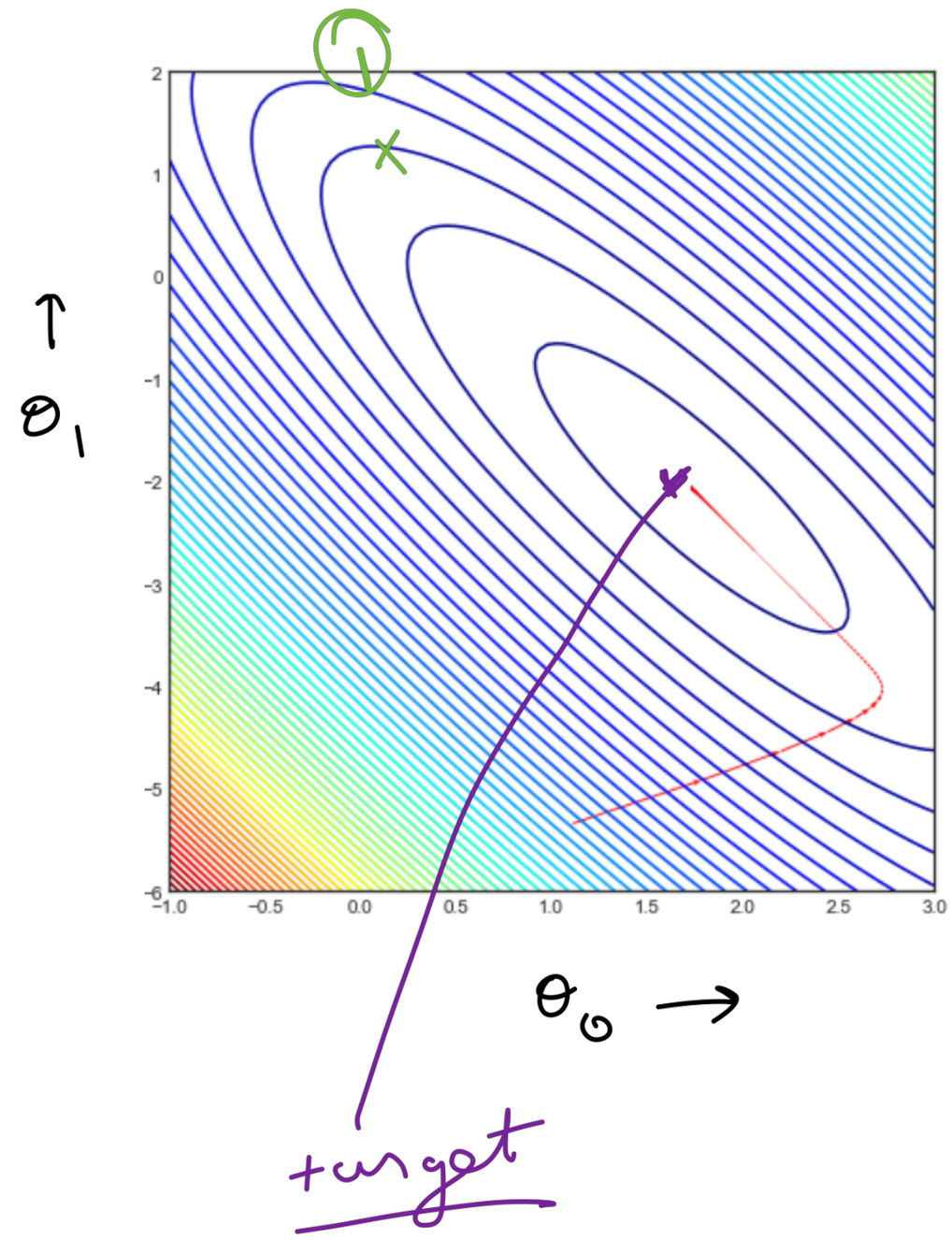

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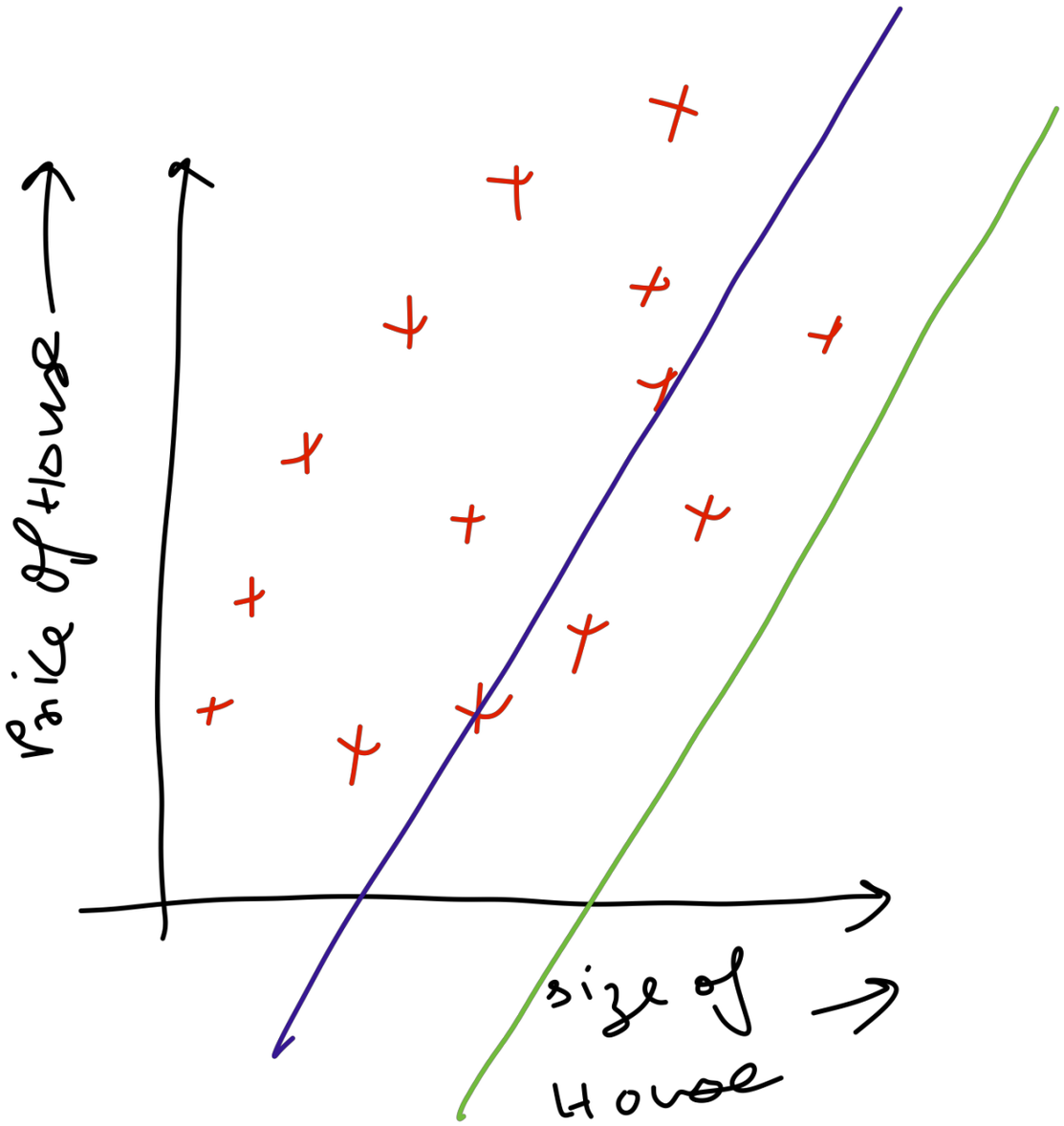

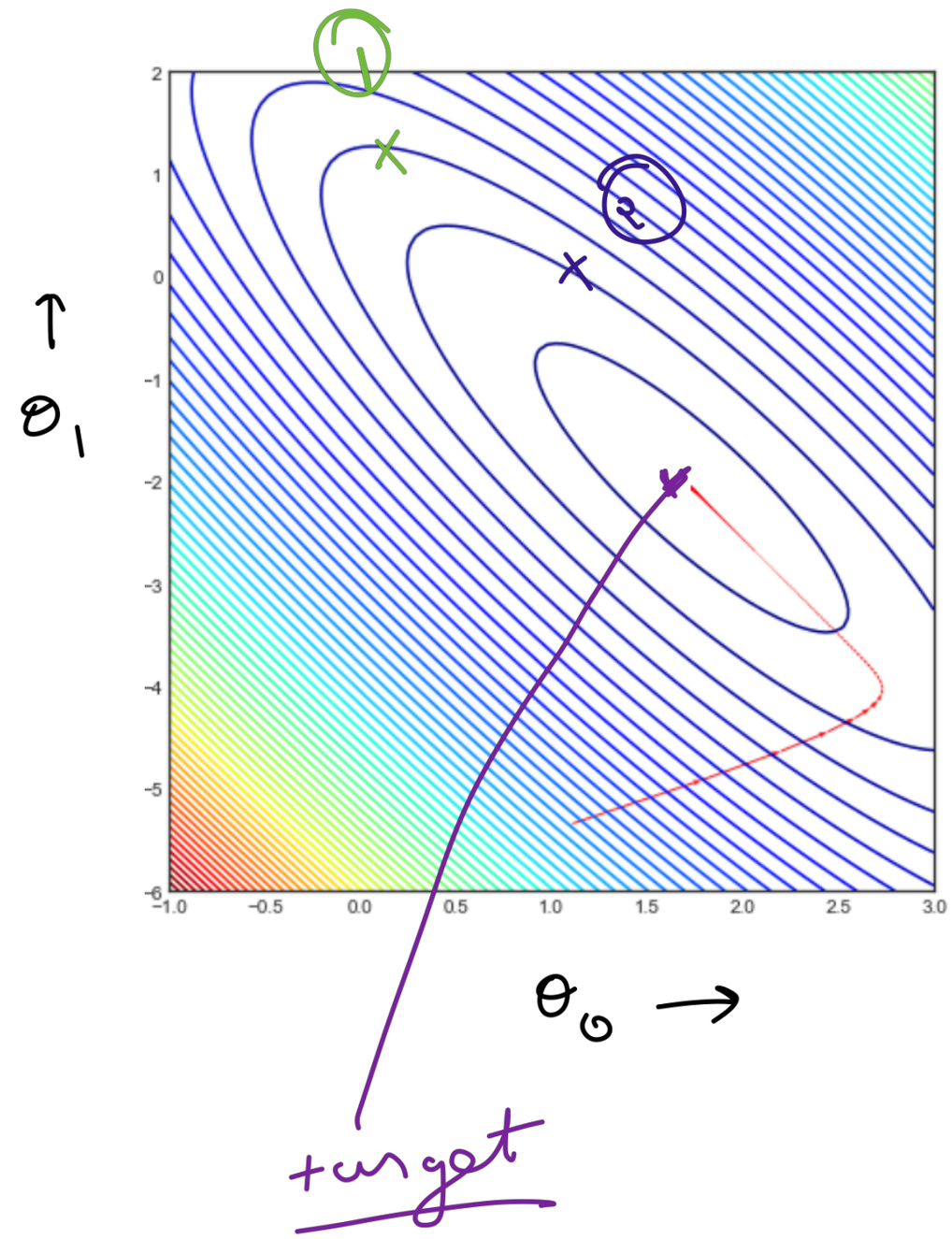

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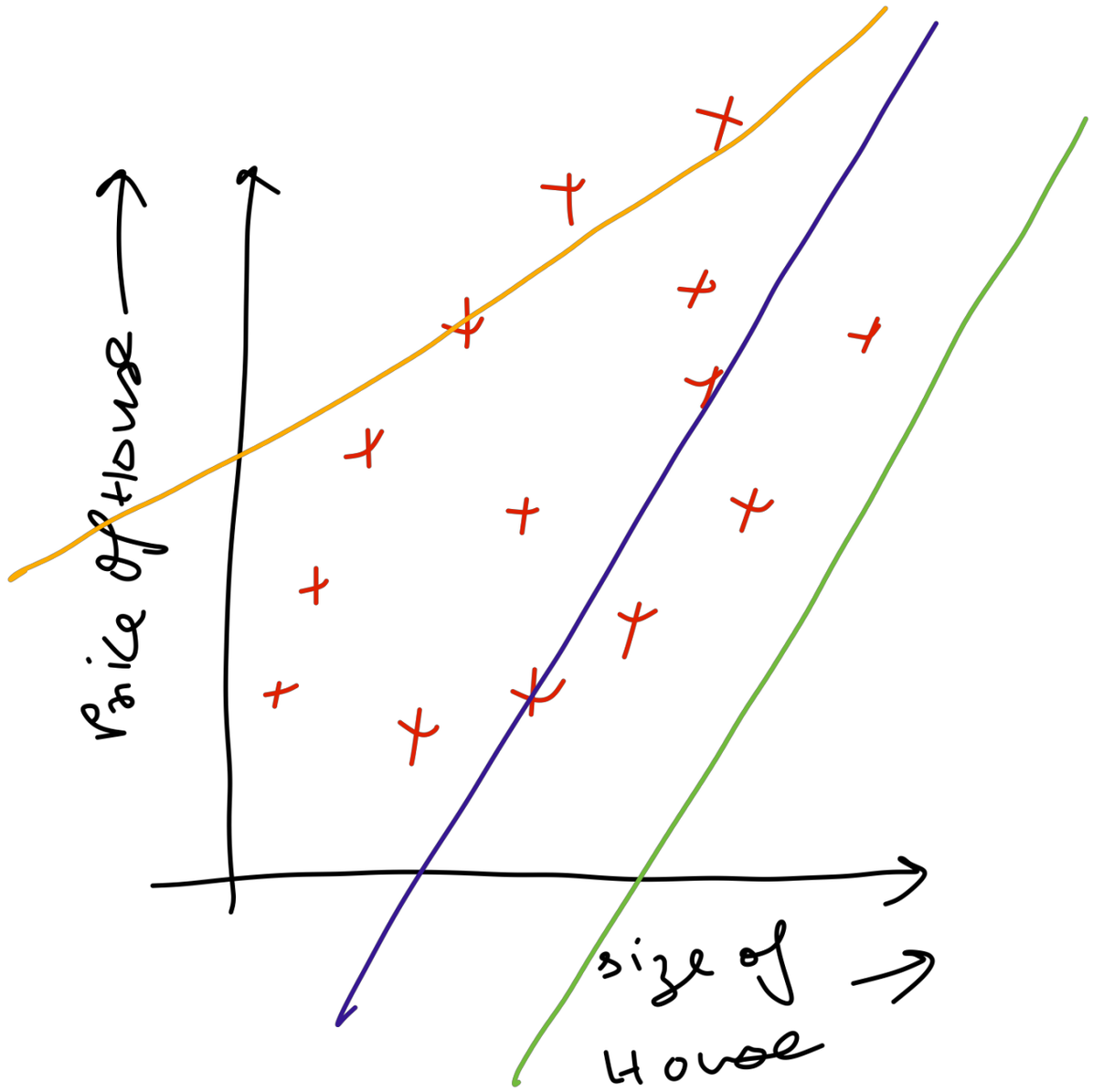

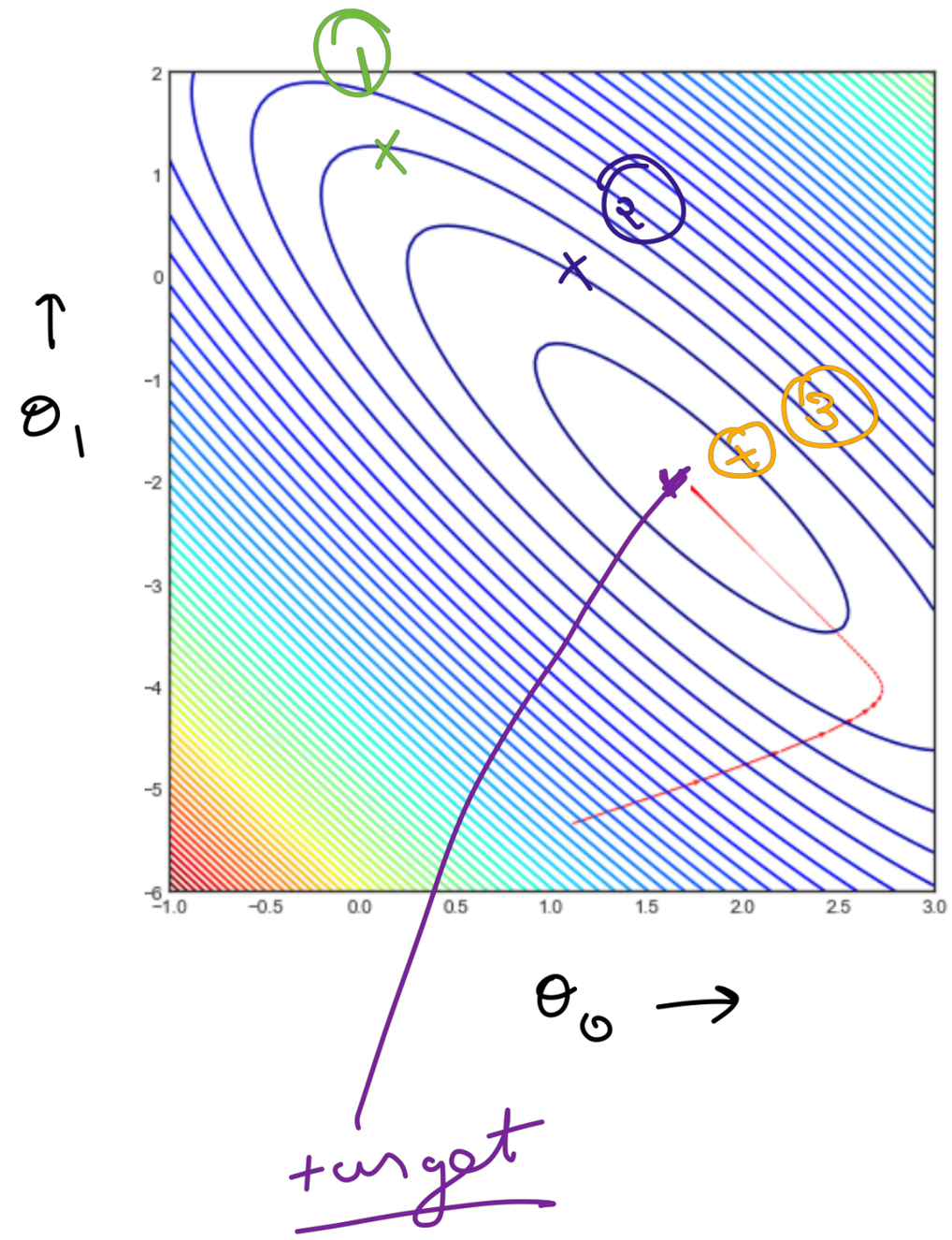

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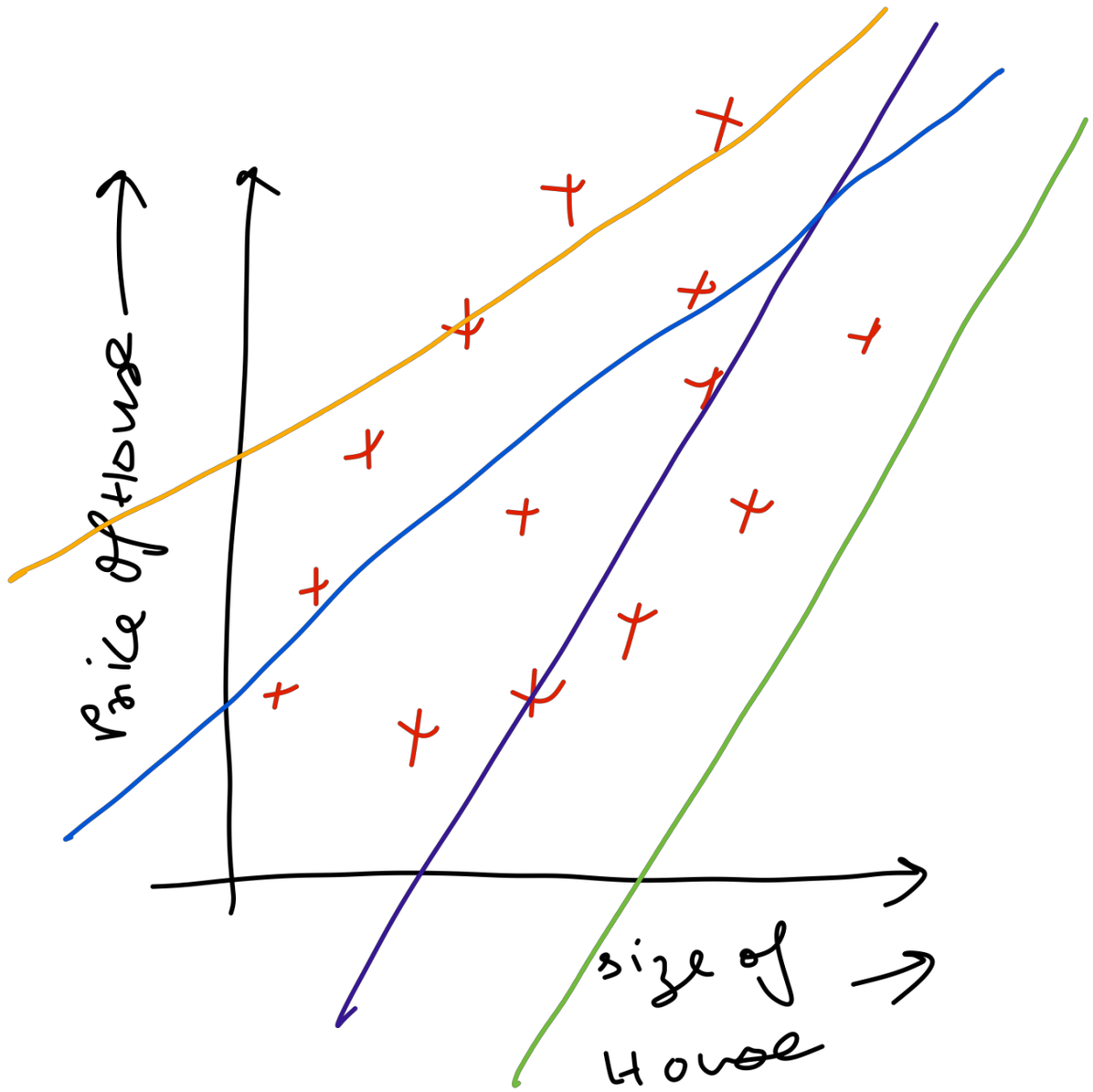
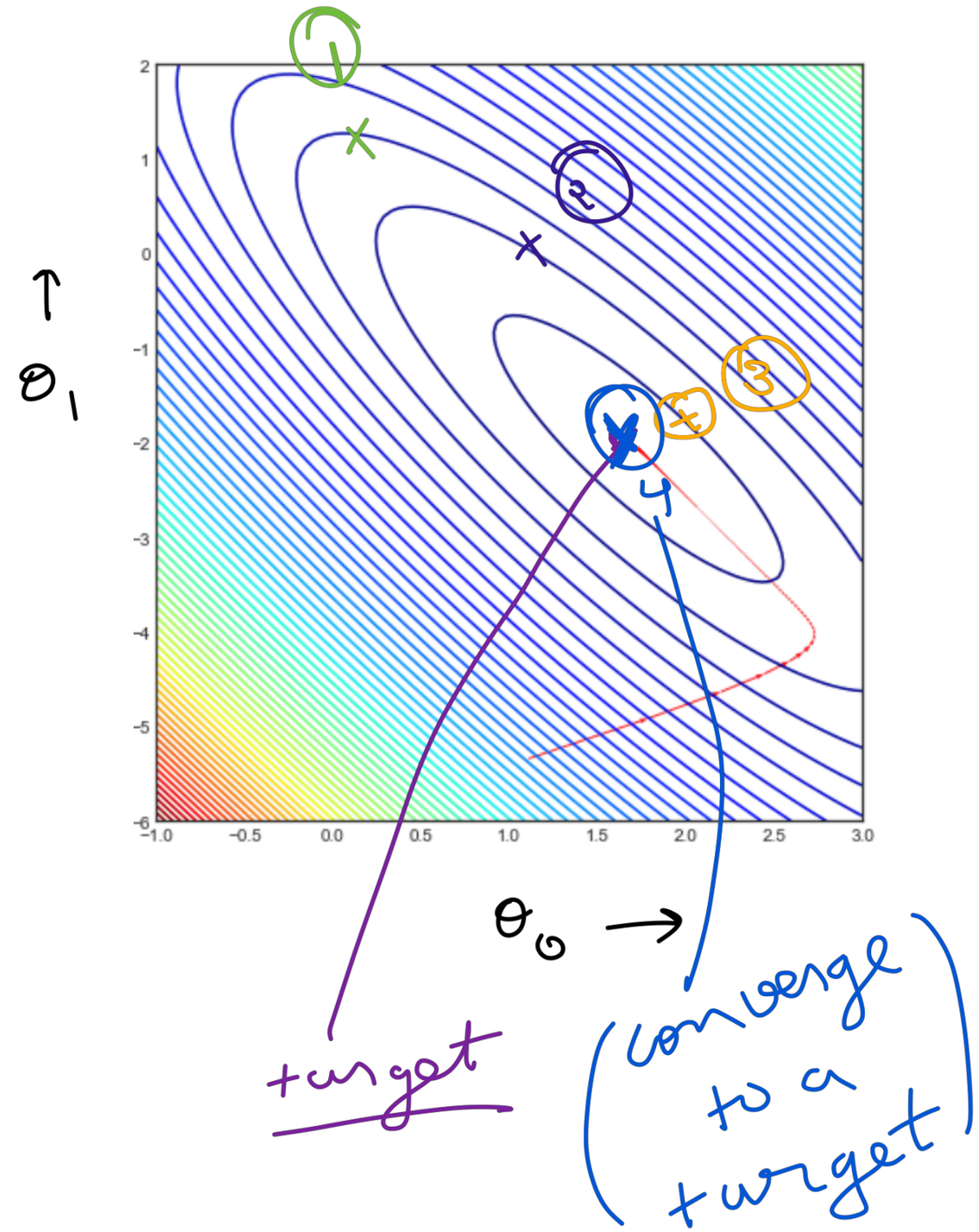

Price of House
size of House


θ_1
θ_0
target
(converge to a target)

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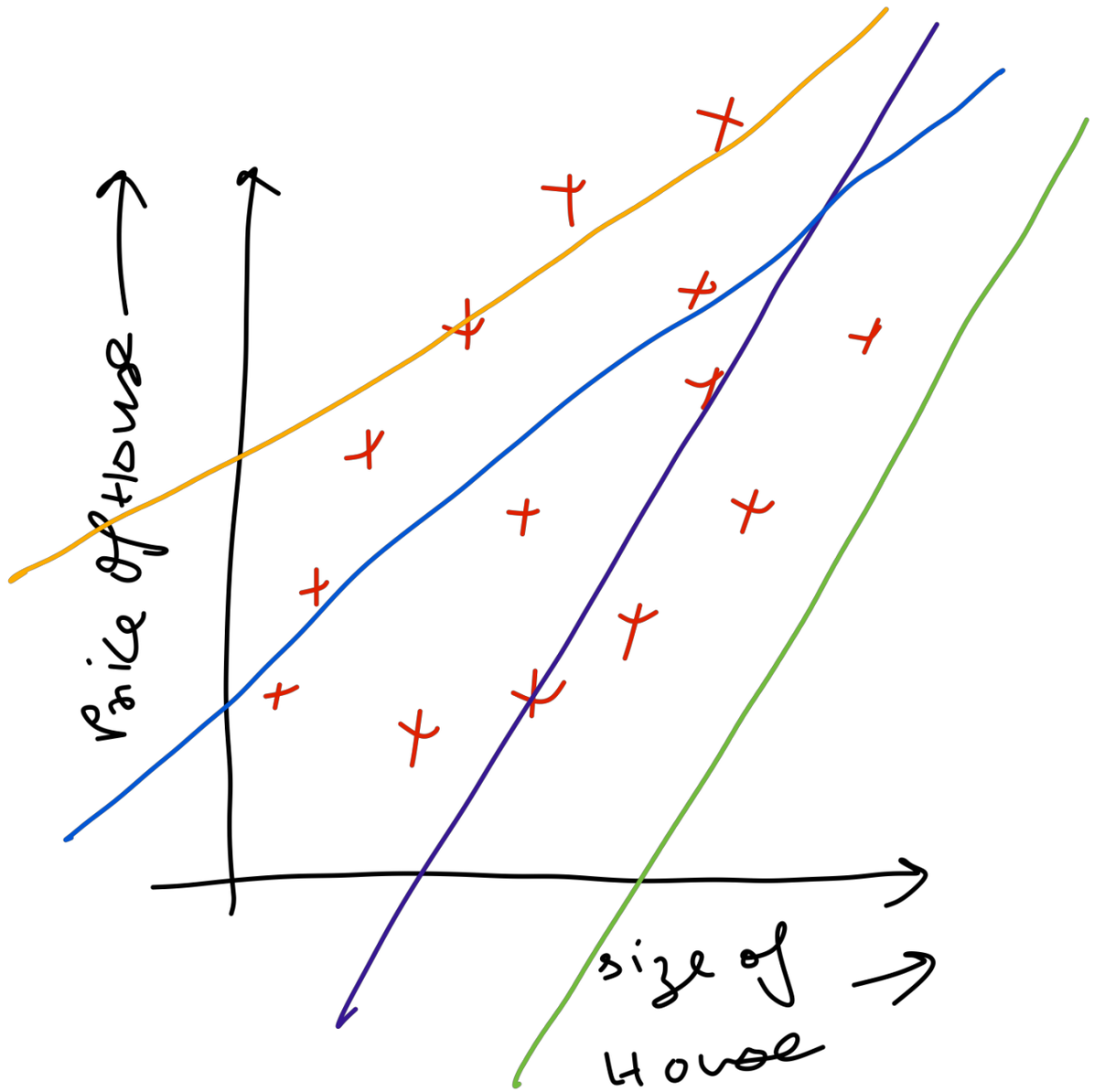

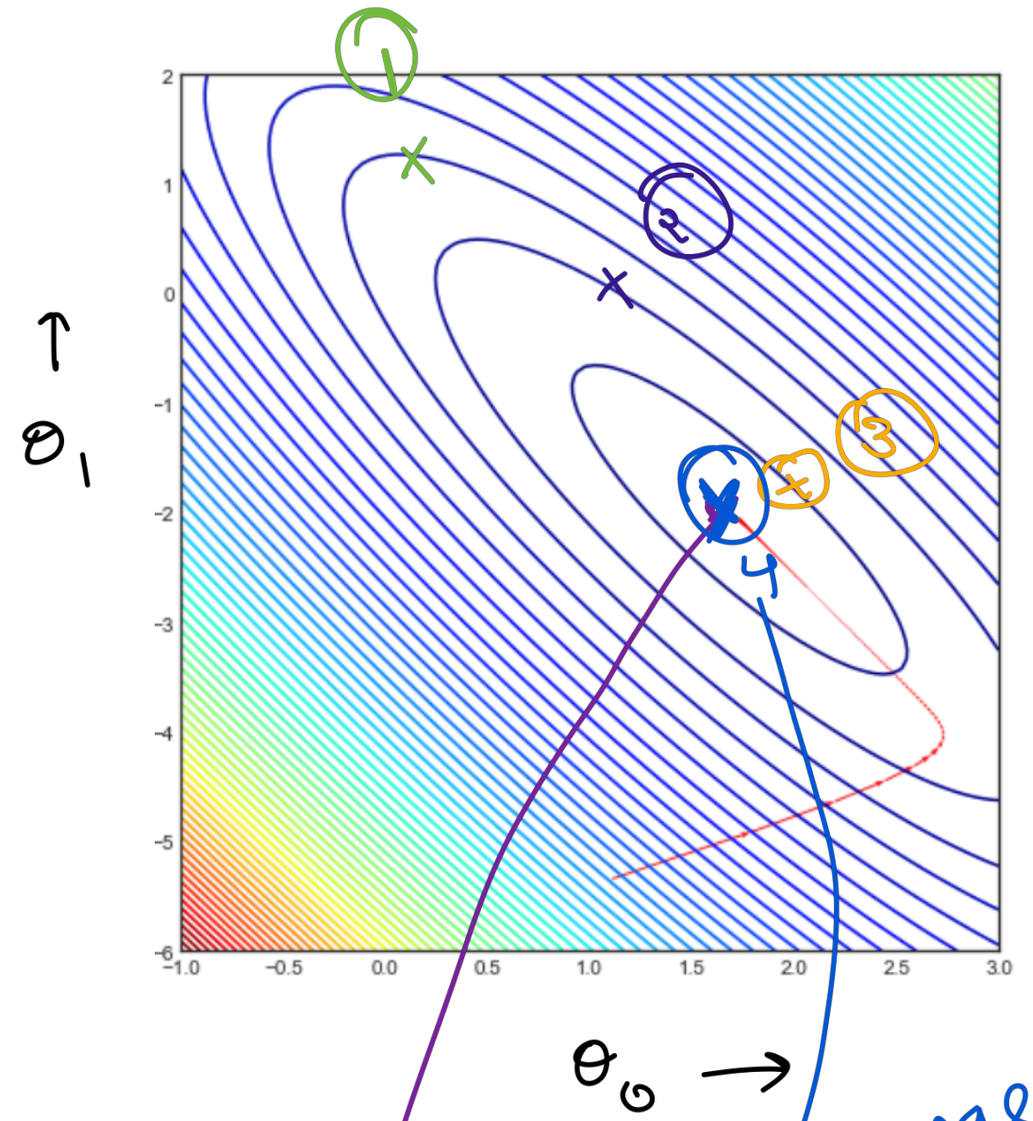

(converge to a target)

(multiple θ_0, θ_1 can give same loss)

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STAY TUNED

THANK YOU :-)

Next

(Gradient Descent ----)

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