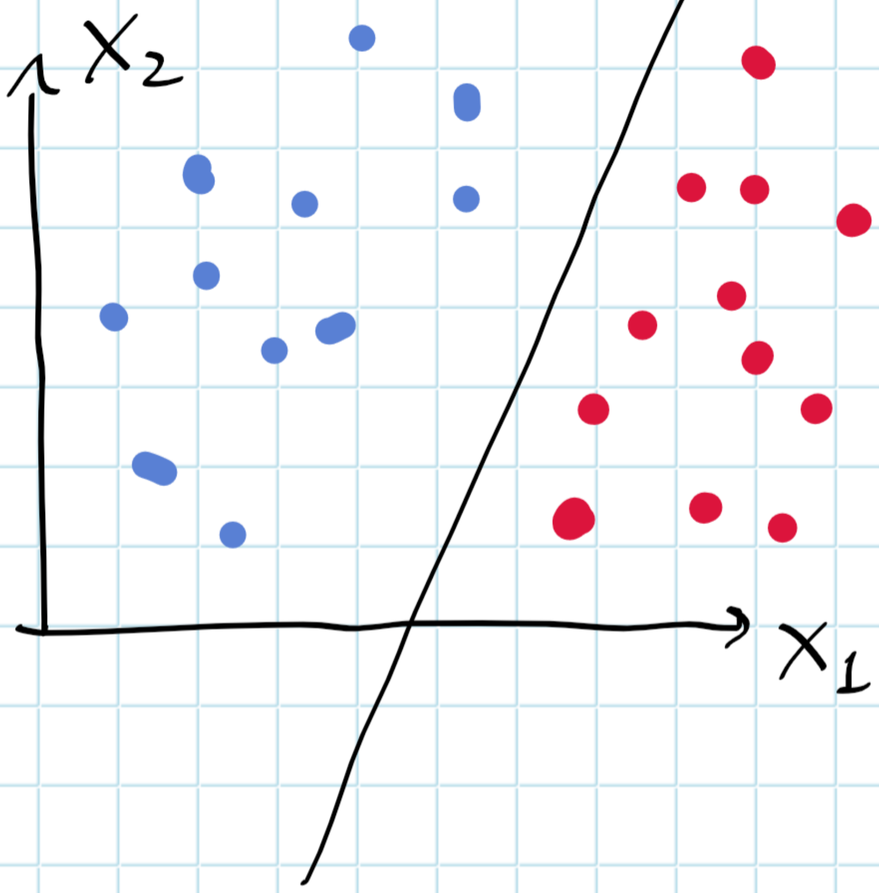
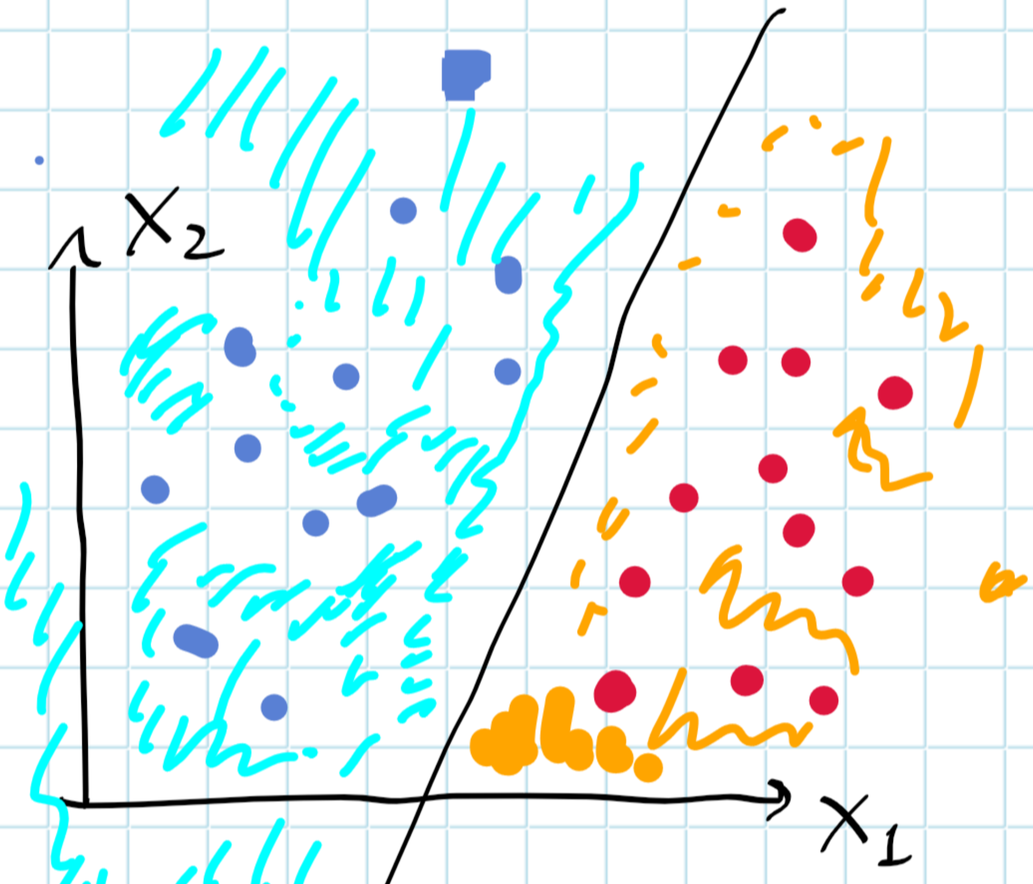
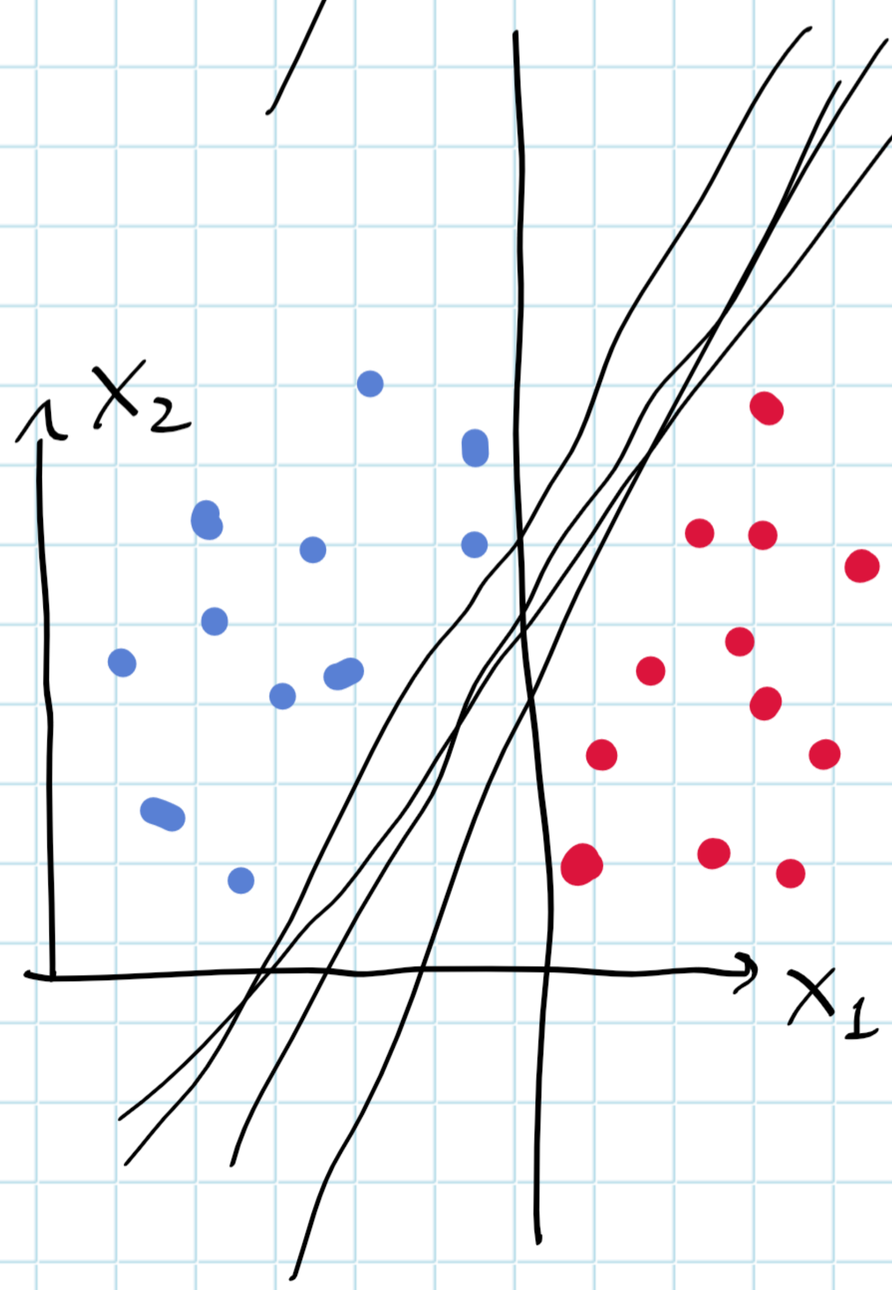
SVM

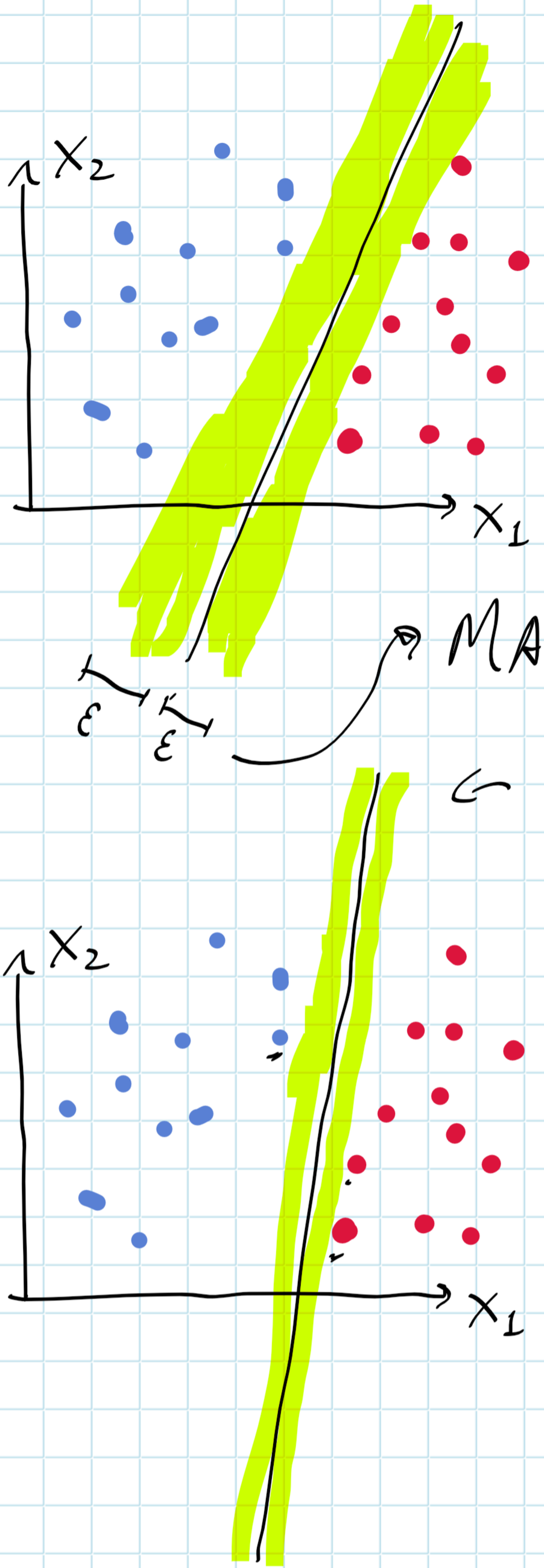


← RETA SEPARADORA





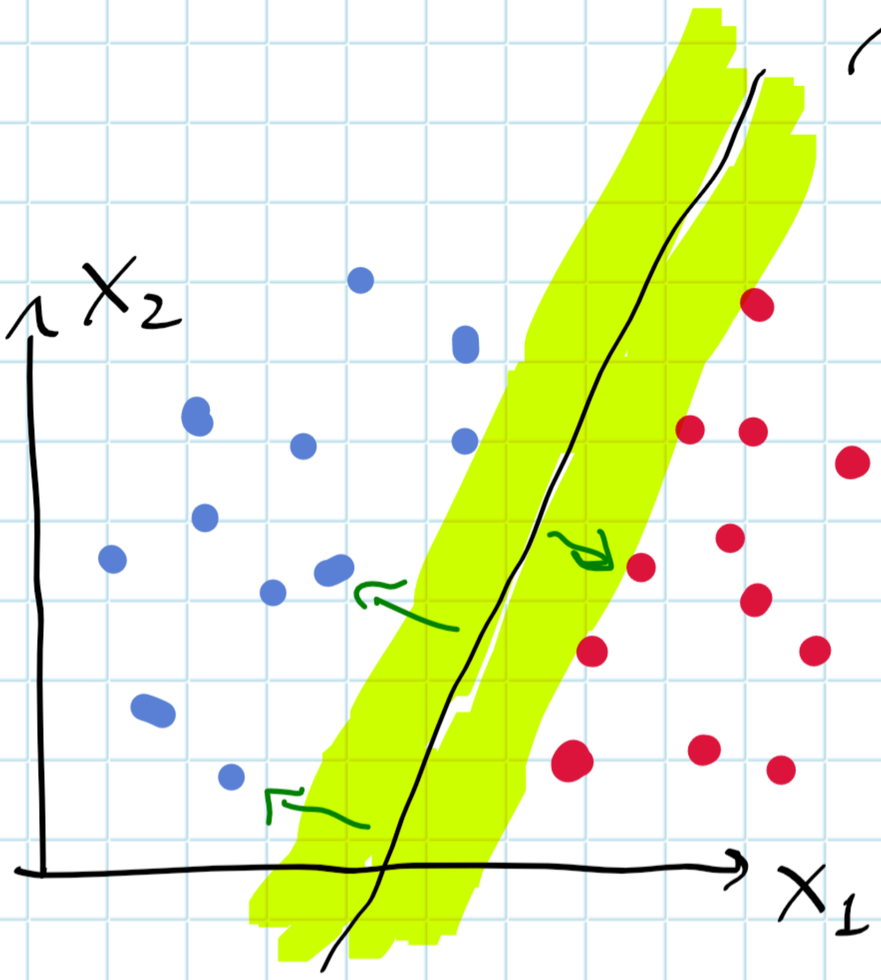
← QUAL QUE VOU USAR?



↳ MARGEM

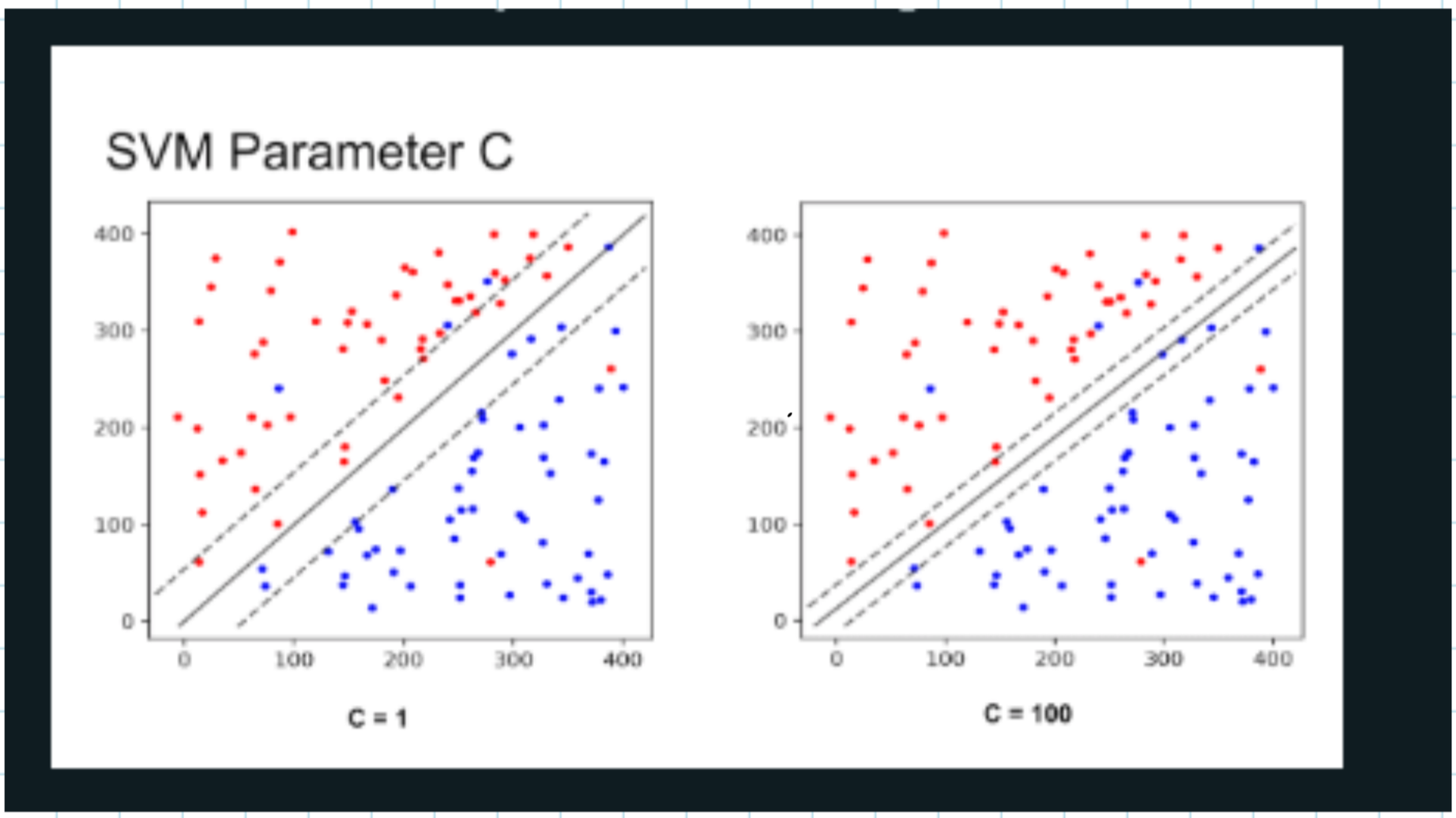
↳ RETA COM MARGEM PEQUENA

- CONSIGO POSICIONAR A MINHA RETA DE VÁRIAS FORMAS DIFERENTES
- CONSEQUENTEMENTE, TENHO MAIS POSSIBILIDADES DE OBTER CLASSIFICAÇÕES DIFERENTES
- TEM "PIOR" GENERALIZAÇÃO DOS RESULTADOS.

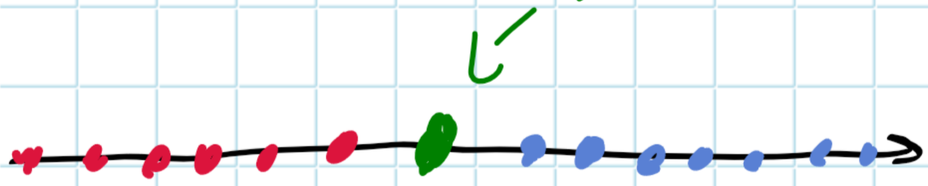


→ RETA COM MARGEM MAIOR

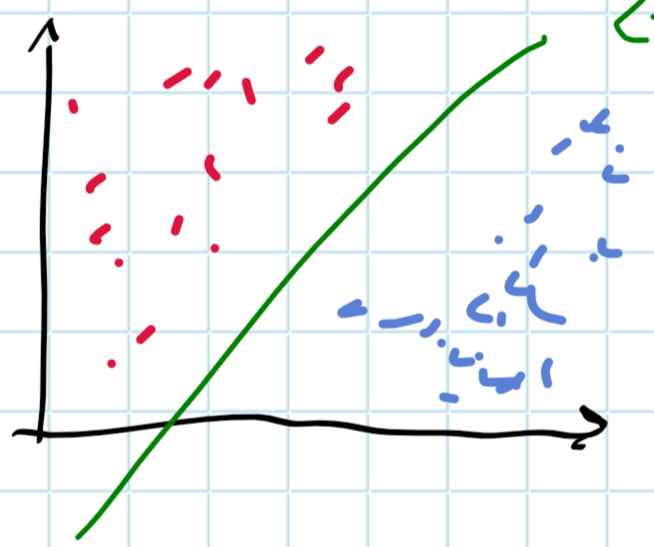
- NÃO É POSSÍVEL OBTER TANTAS POSSIBILIDADES DE SEPARAÇÃO
- CONSEQUENTEMENTE, CONSEGUIMOS SEPARAR O CONJUNTO DE DADOS DE FORMA "QUASE" ÚNICA
- MAIOR GENERALIZAÇÃO DOS RESULTADOS.



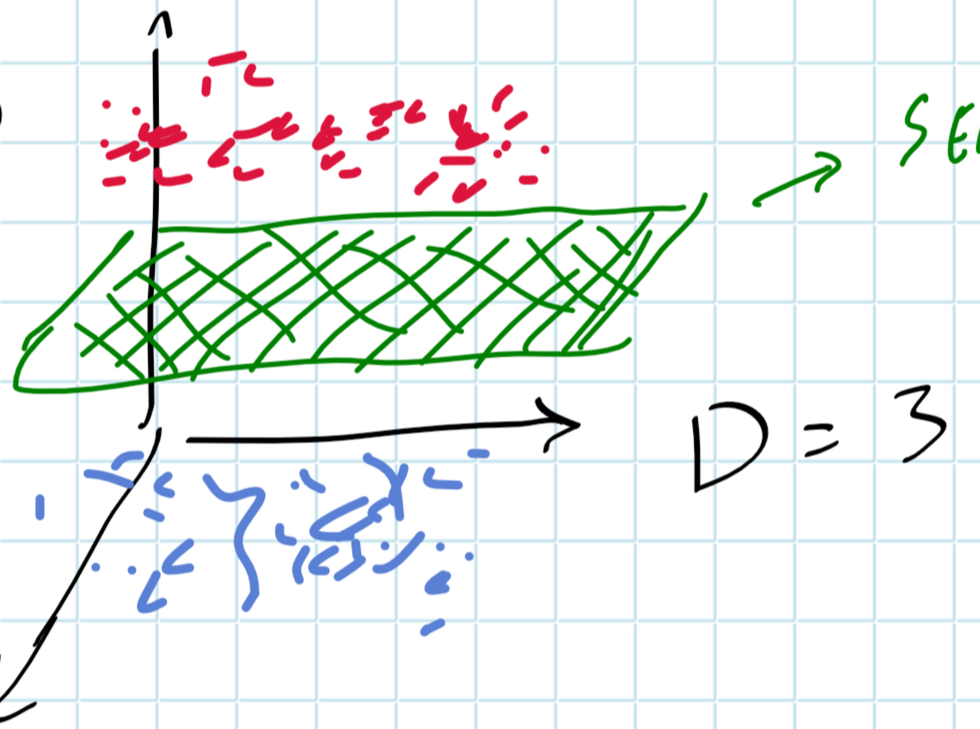
LEMBRE-SE...

1) 

(D-1) → HIPERPLANO

2) 

(D-1) →

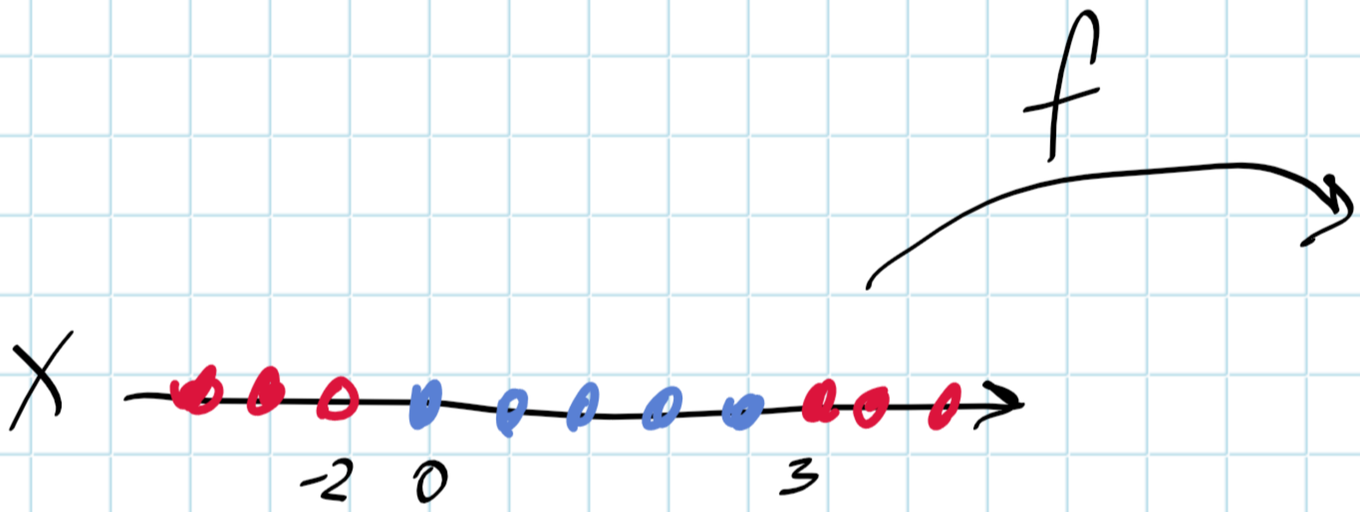
3) 

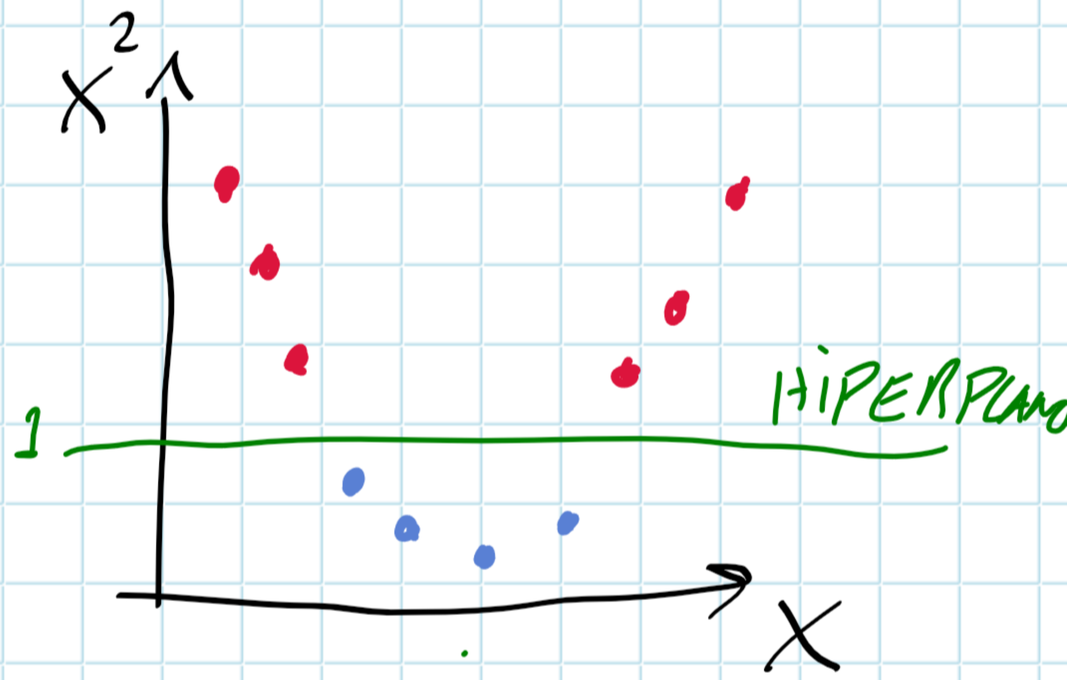
(D-1) → HIPERPLANO

PROBLEMA

SOLUÇÃO: ESPAÇO DE FEATURES

$$f: X \longmapsto (X, X^2)$$





ANTES

X	CORES
-2	●
0	●
3	●

$\xrightarrow{f}$

DEPOIS

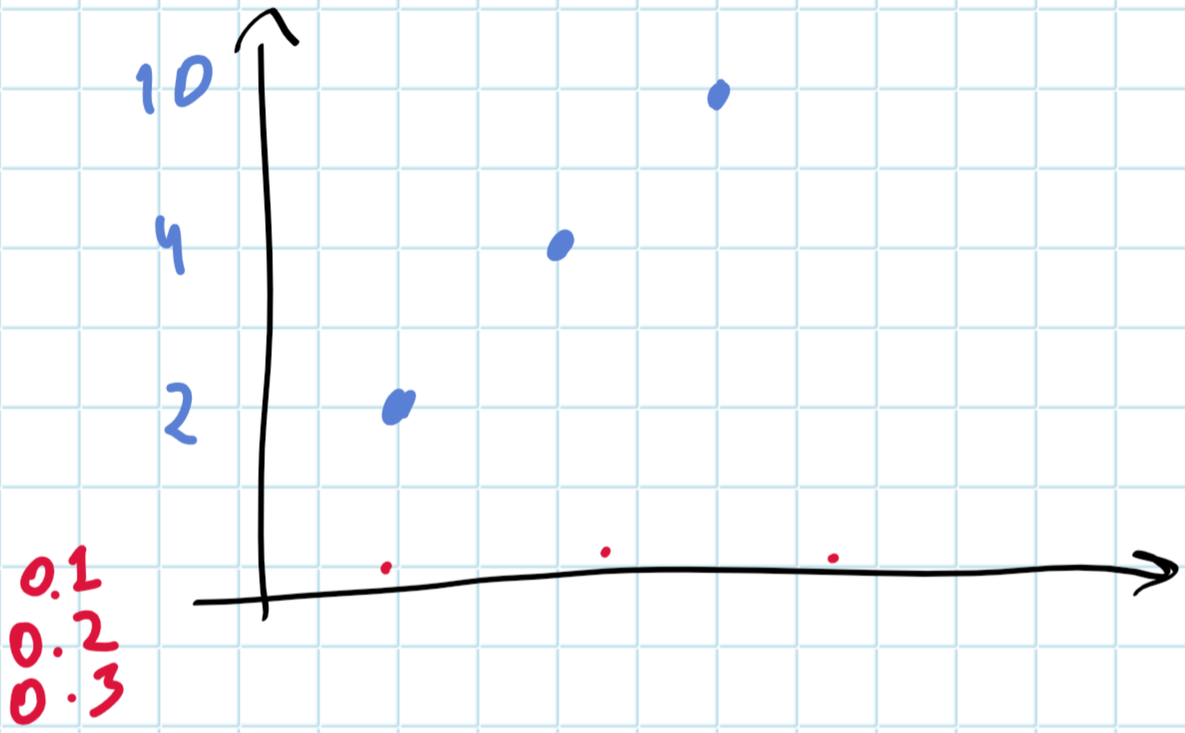
X	X^2	CORES
-2	4	●
0	0	●
3	9	●

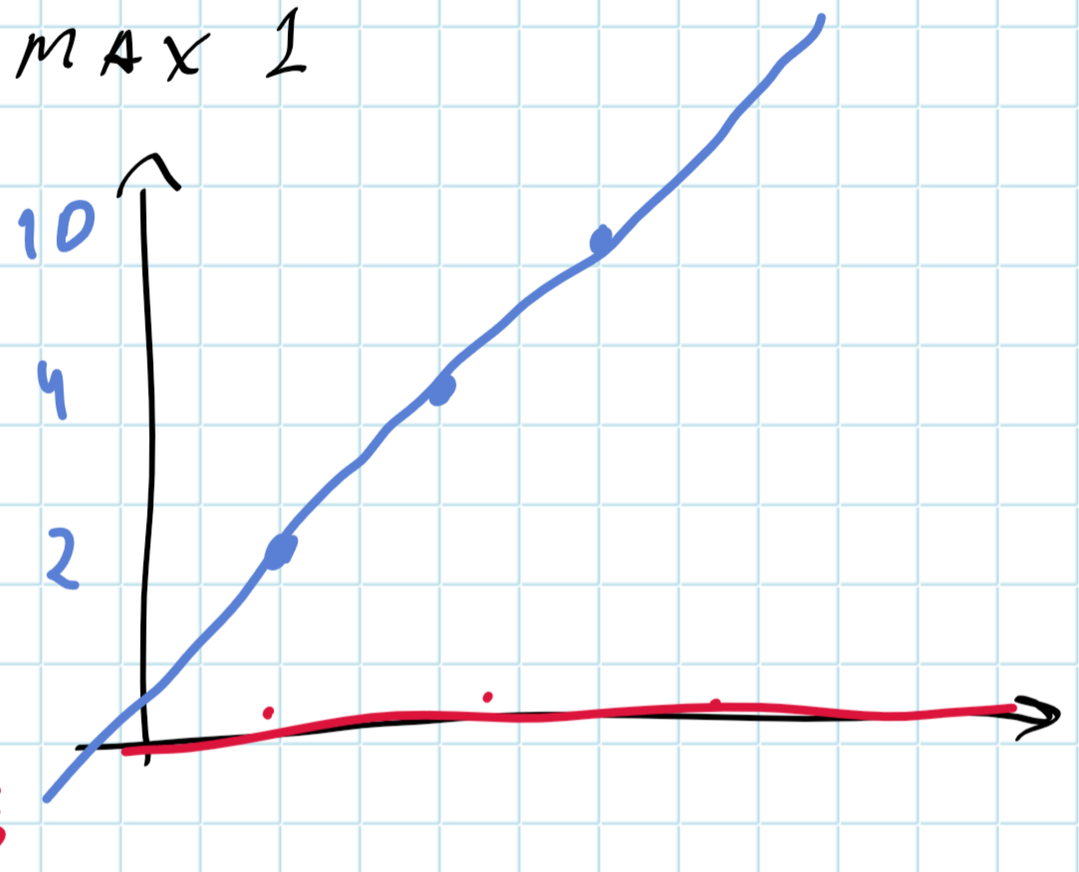
HIPERPLANO = 1

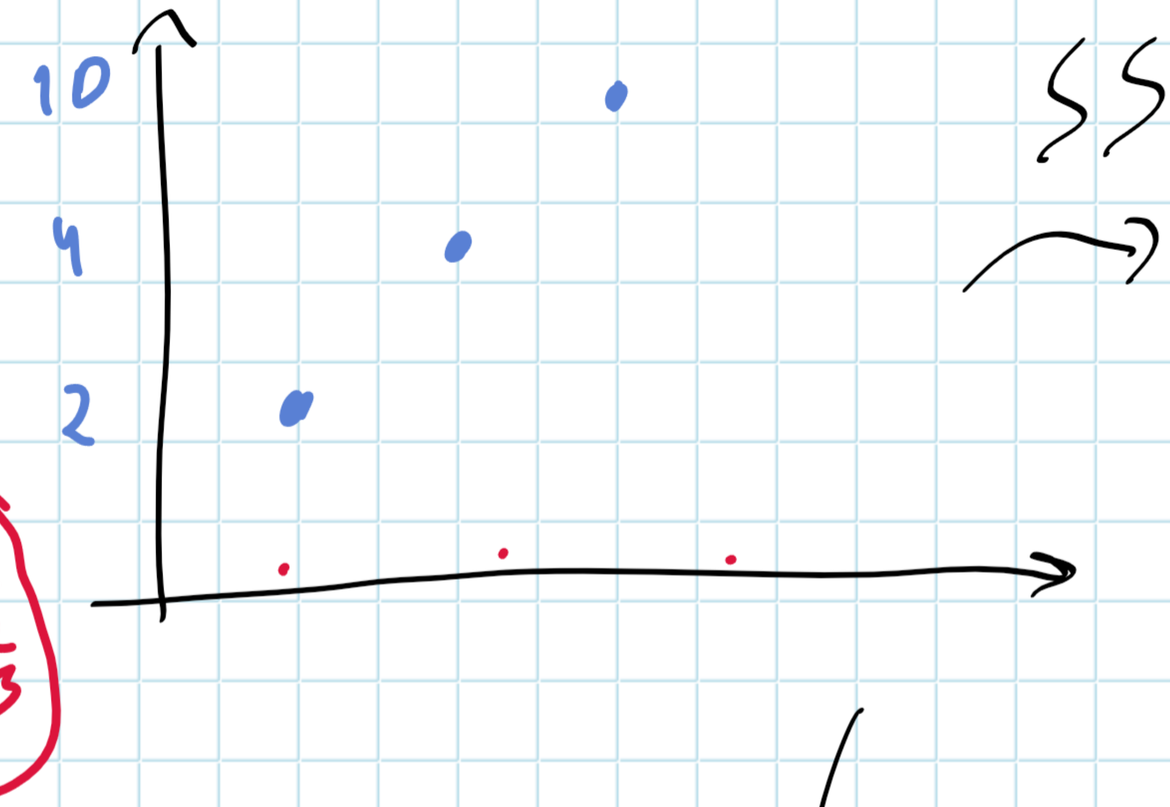
ESSA TRANSFORMAÇÃO AUMENTA O NÚMERO DE DADOS, DIFICULTANDO O PROCESSAMENTO. PARA ISSO SURGE O **KERNEL TRICK**.

STANDARD SCALER → { MÉDIA 0 ; DESVIO PAD. 1

MIN MÁX SCALER → { MIN 0 ; MAX 1







SS

0.1
0.2
0.3

MM