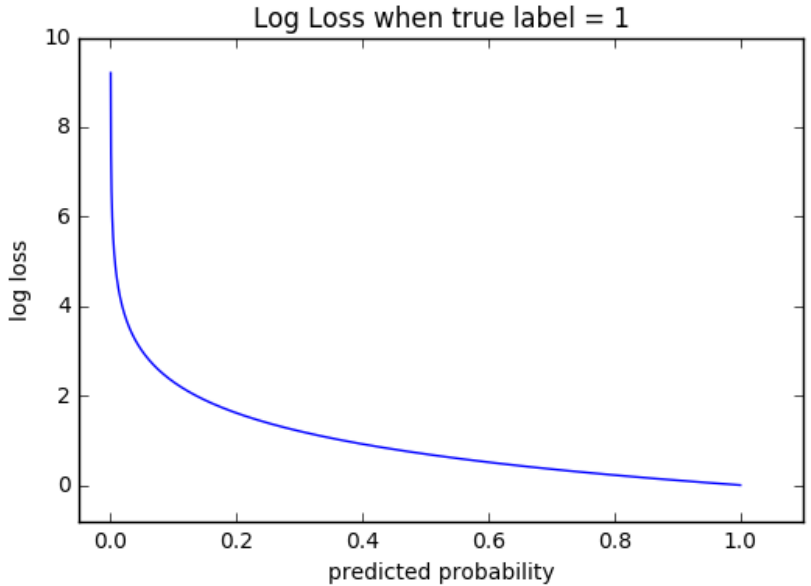
Funções de Custo - Entropia Cruzada Binária

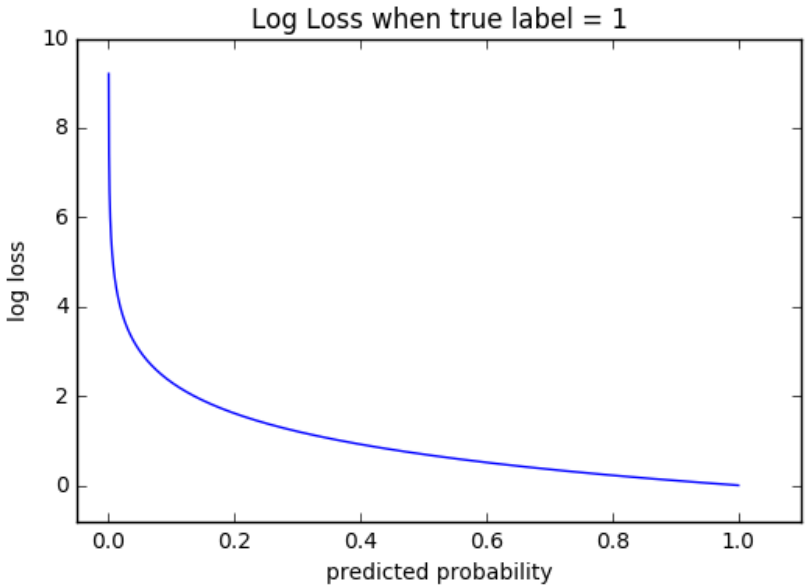
$$BCE = -\frac{1}{N}\sum_{i=0}^{N} y_i \cdot log(\hat{y}_i) + (1 - y_i) \cdot log(1 - \hat{y}_i)$$



https://ml-cheatsheet.readthedocs.io/en/latest/_images/cross_entropy.png

Funções de Custo - Entropia Cruzada

$$CE = -\frac{1}{N}\sum_{i=1}^{N}\sum_{j=1}^{M} y_{i,j} \cdot log(\hat{y}_{i,j})$$



https://ml-cheatsheet.readthedocs.io/en/latest/_images/cross_entropy.png

Funções de Custo

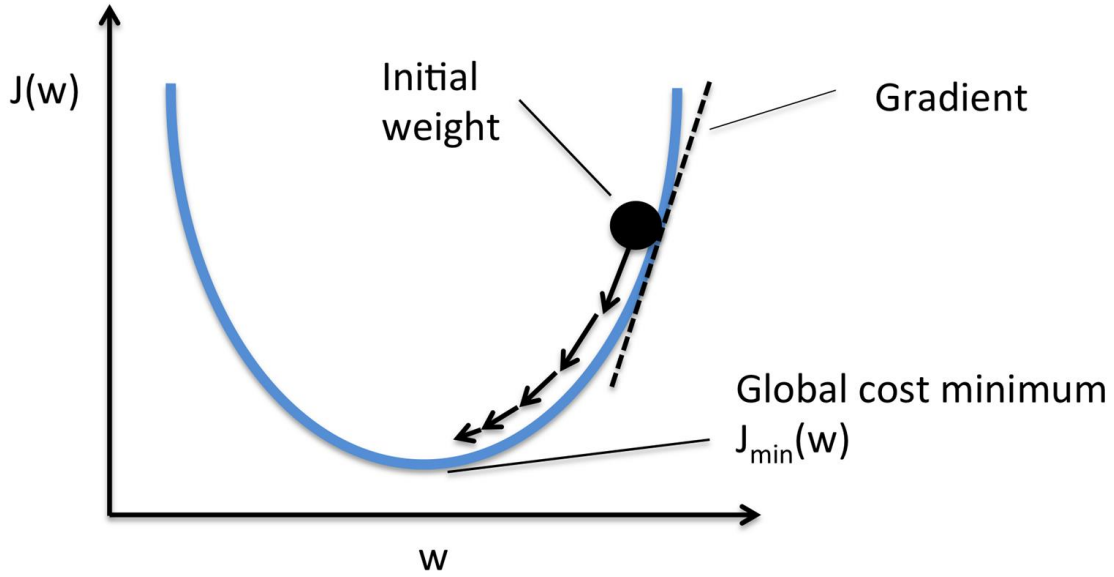
$$Hinge = \frac{1}{N}\sum_{i=1}^{N} \max(0, 1 - y_i^h \cdot f(x_i))$$

$$y^h \in \{-1, 1\}$$

$$\hat{y}^h = 2 \cdot (\hat{y} - 0.5)$$

	y_h	y_pred	y_h_pred	Hinge loss
Corretos	-1	0	-1	0
	1	1	1	0
Errados	1	0	-1	2
	-1	1	1	2
Meio termo	1	0.5	0	1

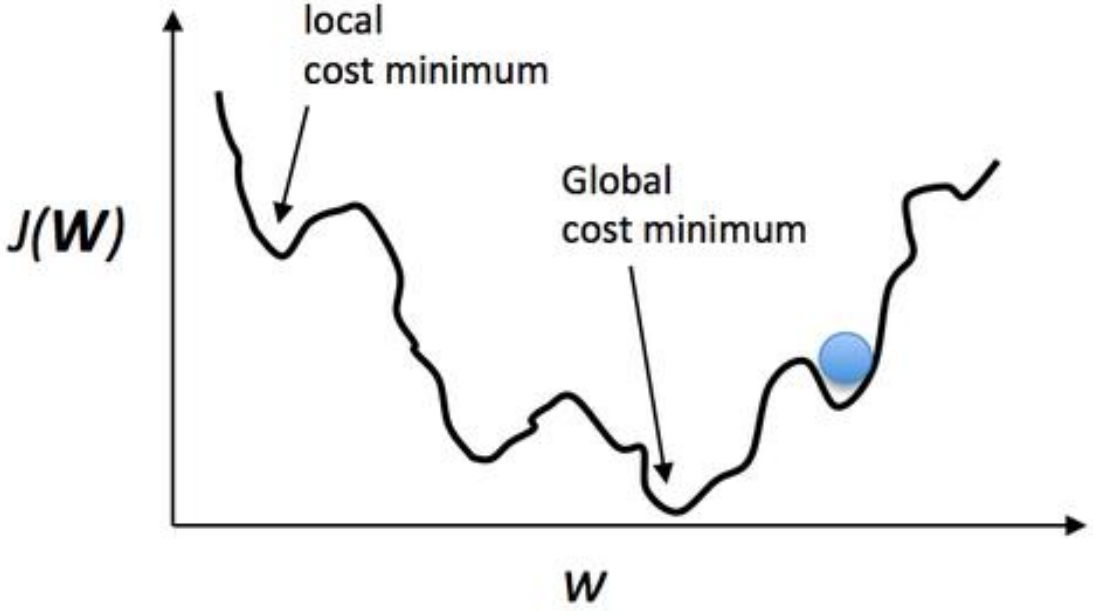
Funções de Custo



http://rasbt.github.io/mlxtend/user_guide/general_concepts/gradient-optimization_files/ball.png

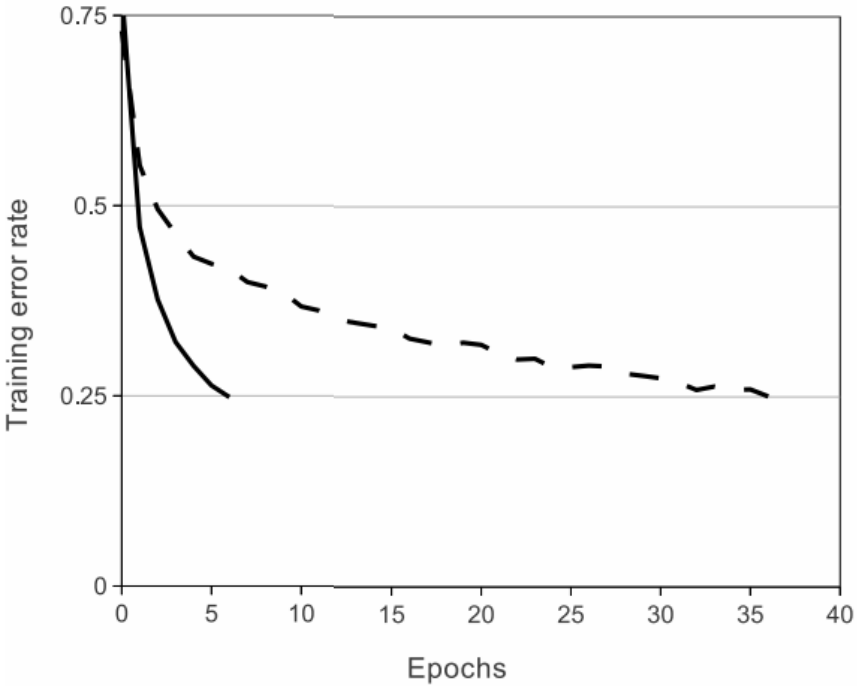
$$w_{t+1} = w_t - \alpha \cdot \frac{dJ(w_t)}{dw_t}$$

Mínimo Local vs Mínimo Global



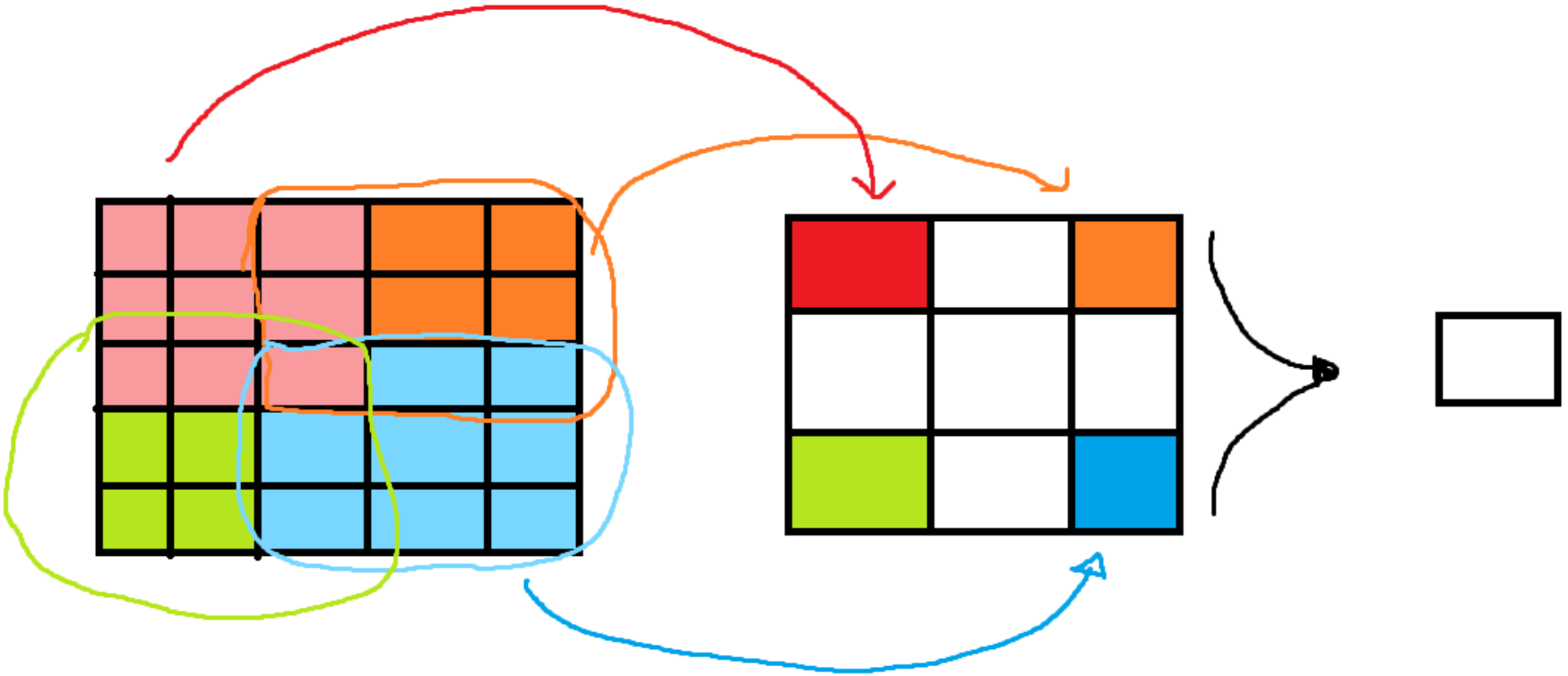
https://external-preview.redd.it/lCbj_Wdc8qBNWtmRTU_6VHW8SMVZ4jmjWVm8I99D1Fw.png?auto=webp&s=186df3a594878e26553220074d5936fa55811c2c

Tanh vs Relu

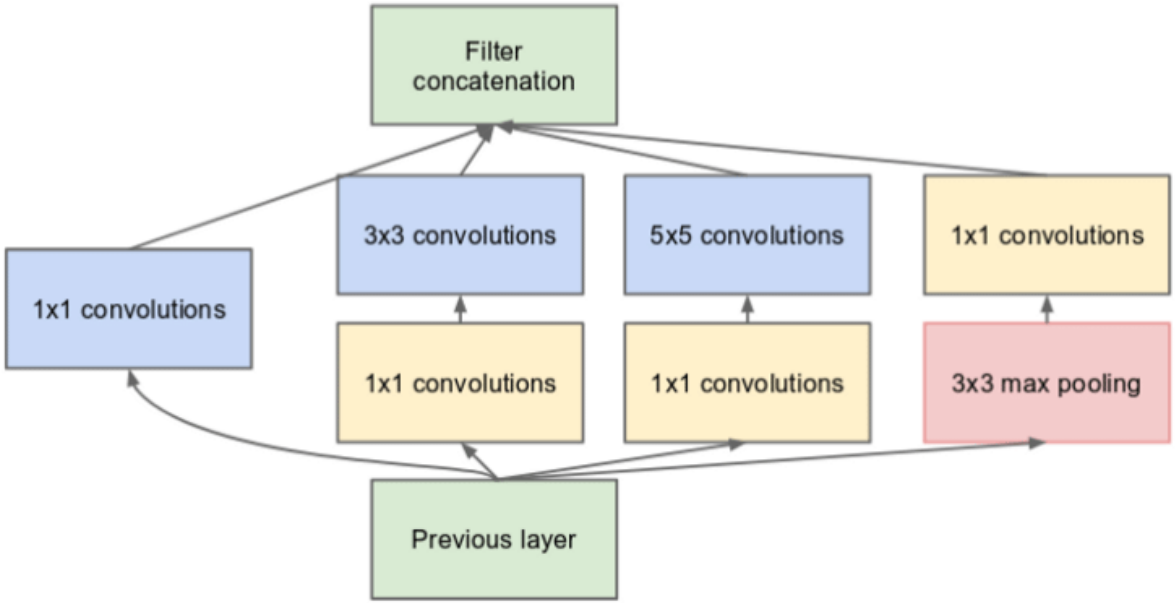


https://papers.nips.cc/paper/4824-imagenet-classification-with-deep-convolutional-neural-networks.pdf

3x3 vs 5x5

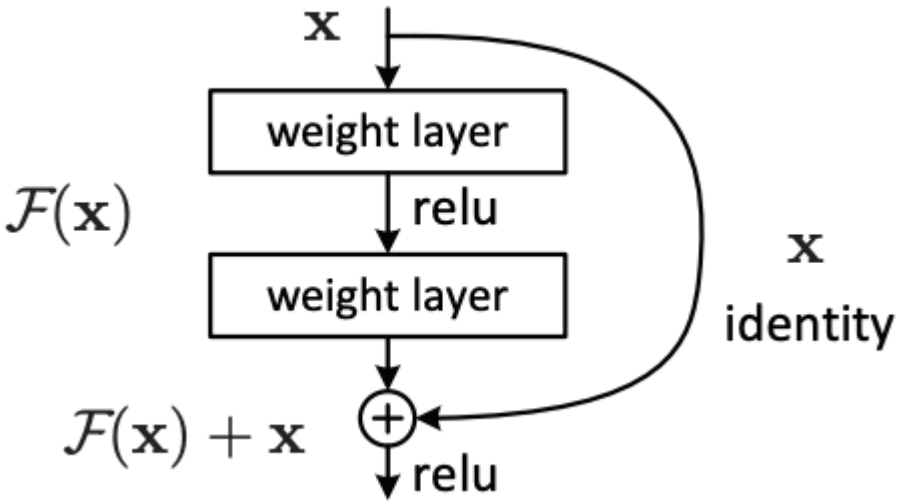


Módulo Inception



https://www.researchgate.net/profile/Bo_Zhao48/publication/312515254/figure/fig3/AS:489373281067012@1493687090916/nception-module-of-GoogLeNet-This-figure-is-from-the-original-paper-10.png

Bloco Residual



https://miro.medium.com/max/472/1*kSYbLzUqCjaBU2g9jlJGEg.png