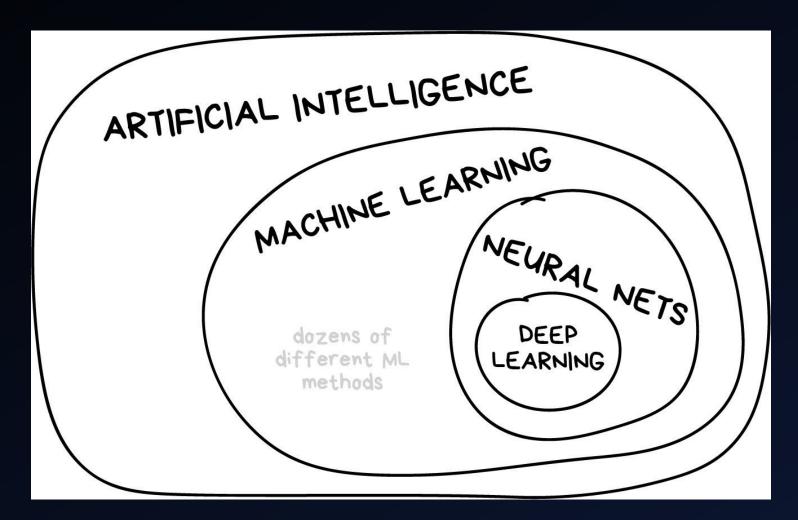
Machine Learning na prática

JOÃO PAULO SEIXAS SAEG IFF

Machine Learning

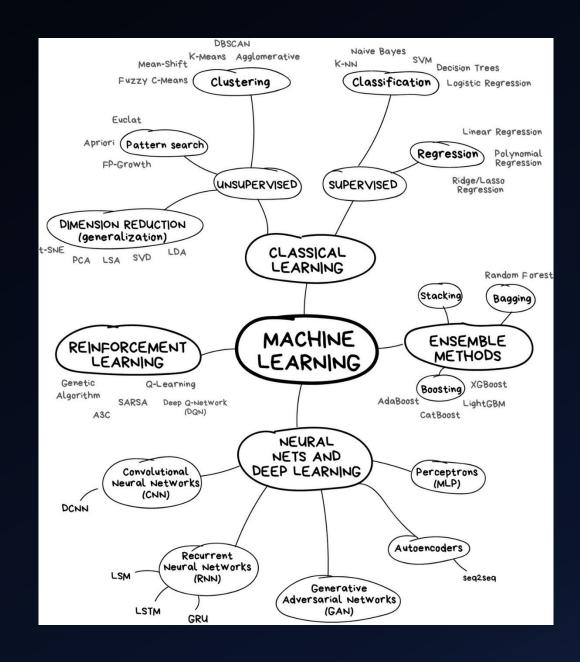


MACHINE LEARNING

Tipos de apredizado

Modelos

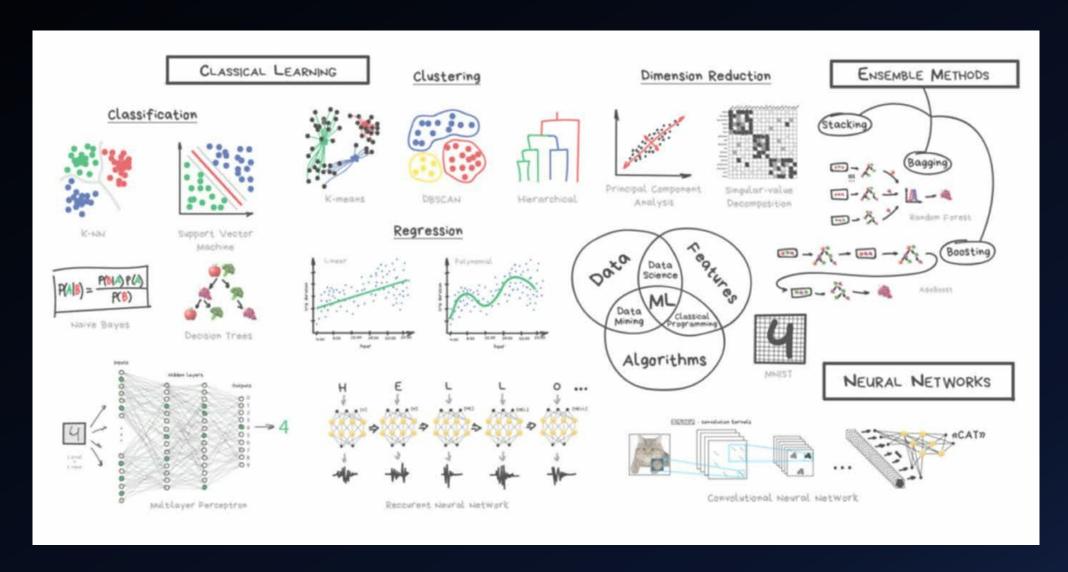
Algoritmos



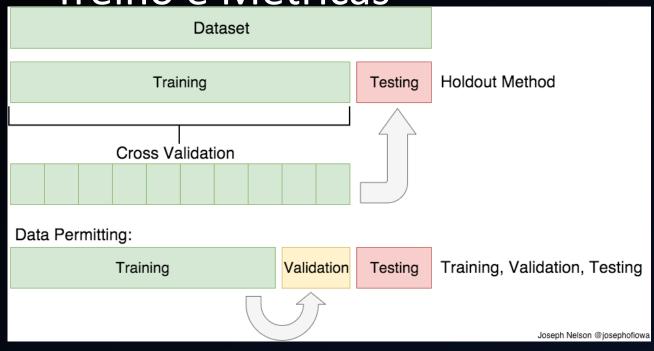
Ferramentas

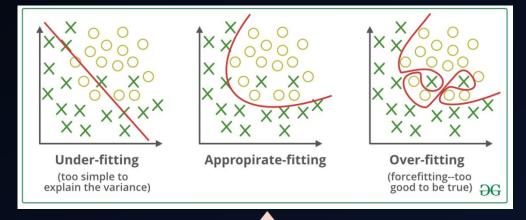


Modelos e Algoritmos



Treino e Métricas





Regression

- o MSPE
- o MSAE
- o R Square
- Adjusted R Square

Classification

- Precision-Recall
- o ROC-AUC
- Accuracy
- o Log-Loss

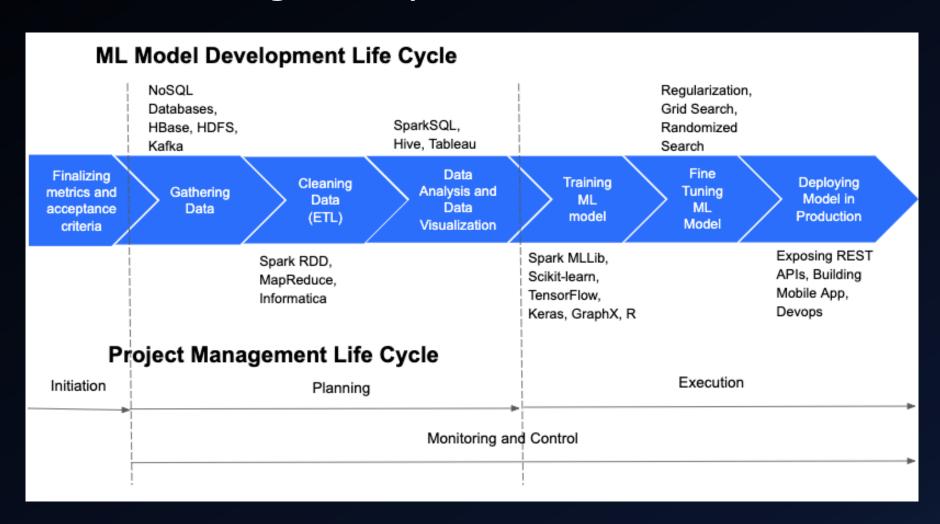
Unsupervised Models

- Rand Index
- Mutual Informatio

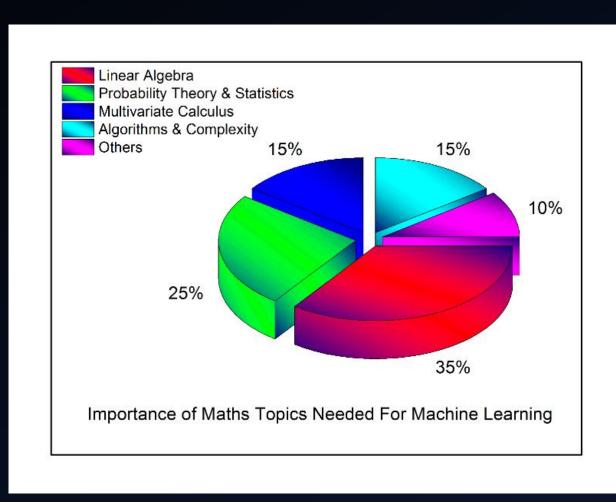
Others

- CV Error
- Heuristic methods to find K
- BLEU Score (NLP)

Machine Learning Life Cycle



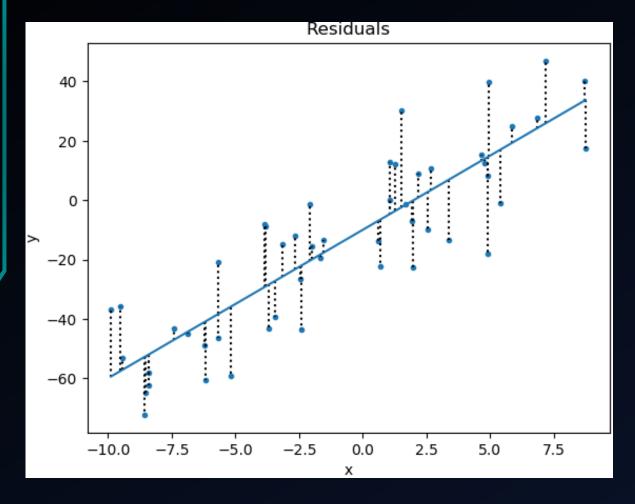
Tópicos



Machine Learning na prática



Regressão Linear

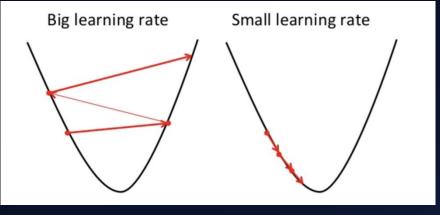


$$minimizerac{1}{n}\sum_{i=1}^{n}(pred_i-y_i)^2$$

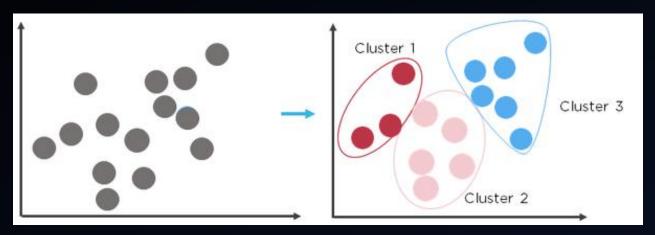
$$J=rac{1}{n}\sum_{i=1}^n(pred_i-y_i)^2$$

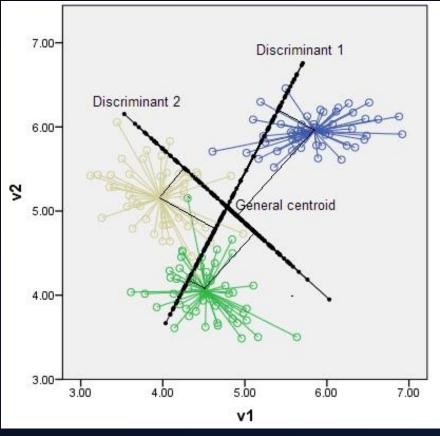
$$a_0 = a_0 - lpha \cdot rac{2}{n} \sum_{i=1}^n (pred_i - y_i).$$

$$a_1 = a_1 - lpha \cdot rac{2}{n} \sum_{i=1}^n (pred_i - y_i) \cdot x_i$$

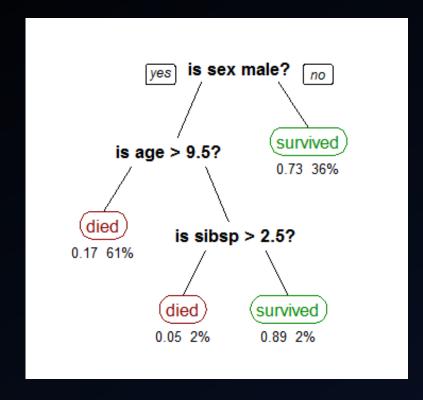


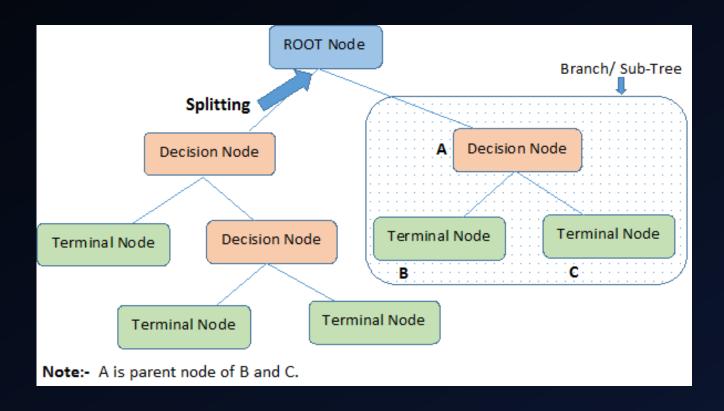
Clustering



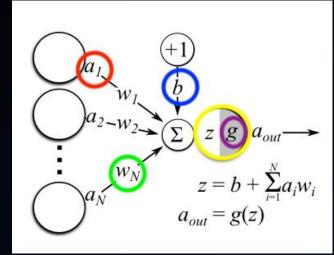


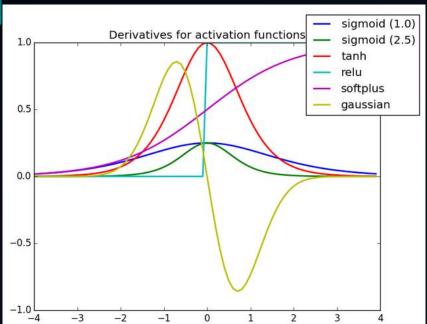
Árvore de Decisão

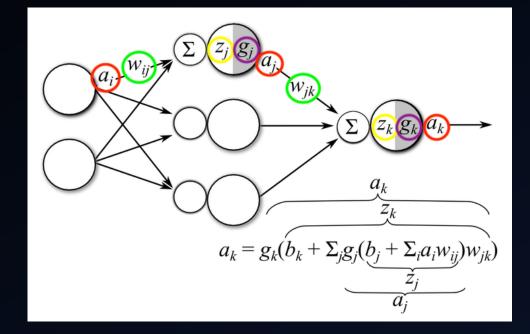




Rede Neural







pixel $3 \rightarrow \bigcirc$ pixel $3 \rightarrow \bigcirc$ pixel $4 \rightarrow \bigcirc$

pixel 5→

pixel 6→

pixel 7→O

pixel 8→

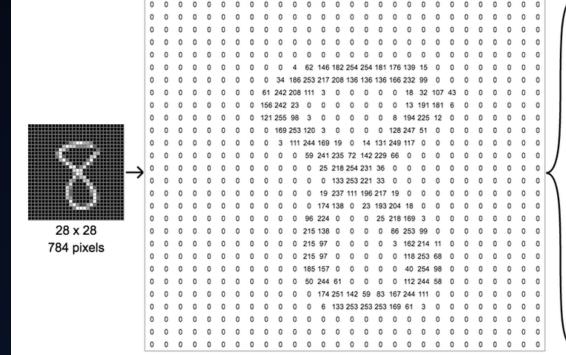
pixel 9→

pixel 10 \rightarrow 0
pixel 11 \rightarrow 0
pixel 12 \rightarrow 0
pixel 13 \rightarrow 0
pixel 14 \rightarrow 0

pixel 15→

pixel 16→O

pixel 18→O



BigML e Colaboratory



