Time Complexity of 10 Most Popular ML Algorithms

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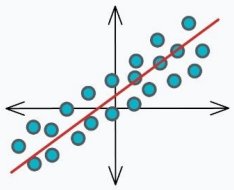
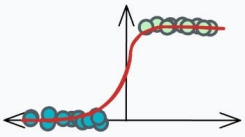
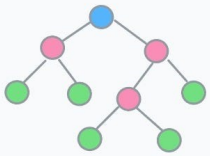
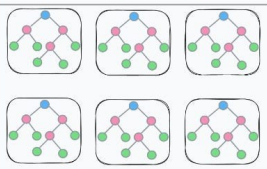
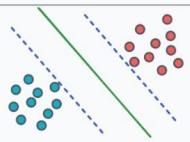
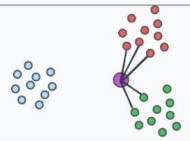
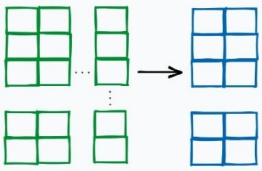
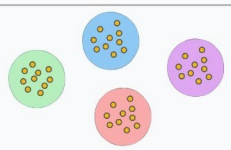
		Training	Inference
	Linear Regression (OLS)	$O(nm^2 + m^3)$	$O(m)$
	Linear Regression (SGD)	$O(n_{epoch}nm)$	$O(m)$
	Logistic Regression (Binary)	$O(n_{epoch}nm)$	$O(m)$
	Logistic Regression (Multiclass OvR)	$O(n_{epoch}nmc)$	$O(mc)$
	Decision Tree	$O(n \cdot log(n) \cdot m)$ $O(n^2 \cdot m)$* Worst case	$O(d_{tree})$
	Random Forest Classifier	$O(n_{trees} \cdot n \cdot log(n) \cdot m)$	$O(n_{trees} \cdot d_{tree})$
	Support Vector Machines (SVMs)	$O(n^2m + n^3)$	$O(m \cdot n_{SV})$
	k-Nearest Neighbors	—	$O(nm)$
$P(B\|A) = \frac{P(B \cap A)}{P(A)}$	Naive Bayes	$O(nm)$	$O(mc)$
	Principal Component Analysis (PCA)	$O(nm^2 + m^3)$	–
	t-SNE	$O(n^2m)$	–
	KMeans Clustering	$O(iknm)$	??

n: samples | m: dimensions | n_{epoch}: epochs | c: classes | d_{tree}: depth | n_{SV}: Support vectors | k: clusters | i: iterations