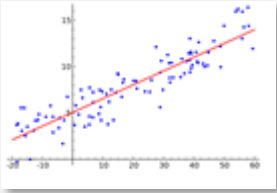# THE DOMINANT
MACHINE LEARNING BRANCHES
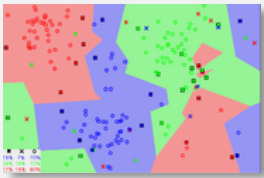
BRANCH #1

Regression

Regression models (both linear and non-linear) are used for predicting a real value, like salary for example. If your independent variable is time, then you are forecasting future values, otherwise – your model is predicting present but unknown values. Regression technique vary from MLR to SVR and Boosted Trees.

BRANCH #2

Classification

Unlike regression where you predict a continuous number, you use classification to predict a category. There is a wide variety of classification applications from medicine to marketing. Classification models include linear models like Logistic Regression, SVM, and nonlinear ones like K-NN, Kernel SVM and Random Forests.

BRANCH #3

Clustering
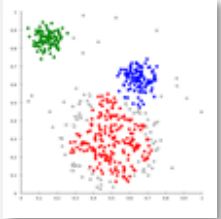
Clustering is similar to classification, but the basis is different – in Clustering you don't know what you are looking for. When you use clustering algorithms on your dataset, unexpected things can suddenly pop up – like structures, clusters and groupings you would have never thought of otherwise.

BRANCH #4

Reinforcement Learning

Reinforcement learning algorithms include techniques like Thompson Sampling, Upper Confidence Bound and Q-Learning. These are used a lot when training machines to perform tasks such as walking. Desired outcomes provide the AI with reward, undesired – with punishment. Machines learn through trial and error.

BRANCH #5

Natural Language Processing

Teaching machines to understand what is said in spoken and written word is the focus of Natural Language Processing. Whenever you dictate something into your iPhone / Android device and it's converted to text – that's an NLP algorithm in action. Methods include decision trees, Markov processes, and more.

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