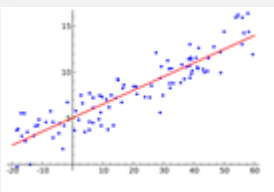THE MAIN
MACHINE LEARNING BRANCHES

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
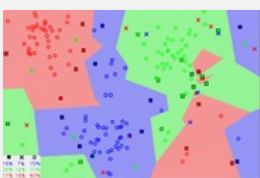
Unlike regression where you predict a continuous number, you use classification to predict a category. There is a wide variety of classification applications from medicine to marketing. Classification models include linear models like Logistic Regression, SVM, and nonlinear ones like K-NN, Kernel SVM and Random Forests.
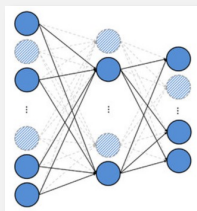
BRANCH #3

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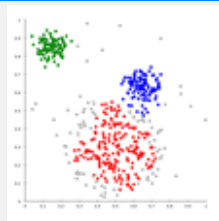
Clustering is similar to classification, but the basis is different – in Clustering you don't know what you are looking for. When you use clustering algorithms on your dataset, unexpected things can suddenly pop up – like structures, clusters and groupings you would have never thought of otherwise.

BRANCH #4

Deep Learning

Deep learning comprises a family of machine learning methods based on artificial neural networks. It mimics the human brain – self-driving cars are one such application of successful deep learning in action. Deep Learning itself has multiple sub-branches including: Convolutional Neural Networks, Recurrent Neural Networks, Self-Organizing Maps, Boltzmann Machines – to name but a few.

BRANCH #5

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.

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