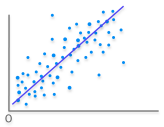
The Top 5

MACHINE LEARNING BRANCHES

Machine Learning is the technology that allows a computer system to learn from the environment, through re-iterative processes and improve itself from experience. Without the need for any additional explicit programming, machine learning algorithms organize the data, learn from it, gather insights and make predictions based on the information it analyzed.

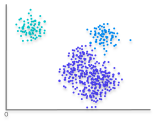


Regression

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 techniques vary from MLR to SVR and Boosted Trees.

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.

Classification



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.

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.

Reinforcement Learning

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.

SOURCES:

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