18 Artificial Intelligence (AI) 人工智能

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machine learning (ML) 机器学习

enable a computer system to learn without being explicitly programmed.

unsupervised learning 无监督学习

a type of ML that allows the process to discover previously undetected patterns on its own that. It only requires unlabelled input data to be given, and is not trained on the right output.

supervised learning 有监督学习

a type of ML that maps an input to an output. Labelled data set consisting of pairs of known input and associated outputs is given to train it. It predicts future outcomes based on past data.

reinforced learning 强化学习

a type of ML that learns interactively from its own experiences. It is based on trial-and-error: the agent performs an action and is given a feedback, each good action is rewarded and each bad action is punished. The agent improves its performance using the feedback, adjusting itself to achieve more rewards, and hence it can work with unlabelled data.

Deep Learning 深度学习

a subcategory of ML that simulates the data-processing capabilities of the human brain to make decisions. It structures algorithms in layers: an input

layer, a large number of hidden layers, and an output layer. They form an artificial neural network to learn and make intelligent decisions on its own. It is trained using large quantities of unlabelled data.

error back propagation 误差反向传递

method used in artificial neural networks to calculate error gradients so that actual node/neuron weightings can be adjusted to improve the performance of the model.