

Topic 18: Artificial Intelligence

EAL keyword sheet - Cambridge International AS & A Level Computer Science 9618. Write the word in your own language in the last column.

Keyword	Meaning	Example sentence	In my language
artificial intelligence (AI)	Computer systems that perform tasks that usually need human intelligence.	<i>AI can recognise speech.</i>	
graph	A set of nodes (vertices) joined by edges.	<i>A road map can be a graph.</i>	
node / vertex	A point in a graph.	<i>Each city is a node.</i>	
edge	A connection between two nodes.	<i>An edge may have a weight.</i>	
weight / cost	A value on an edge, e.g. distance.	<i>The weight is 5 km.</i>	
Dijkstra's algorithm	Finds the shortest path from one node to all others.	<i>Dijkstra's algorithm uses a priority queue.</i>	
A* algorithm	Finds the shortest path using the cost so far and an estimate to the goal.	<i>A* is faster than Dijkstra's algorithm.</i>	
heuristic	A rule of thumb that gives an estimate.	<i>The straight-line distance is a heuristic.</i>	
machine learning	Computers improving from experience or data.	<i>Machine learning finds patterns in data.</i>	
supervised learning	Learning from labelled examples.	<i>Training on photos labelled 'cat' or 'dog'.</i>	
unsupervised learning	Finding patterns in data with no labels.	<i>Clustering customers is unsupervised.</i>	
reinforcement learning	Learning by trying actions and receiving rewards or penalties.	<i>A robot learns to walk using rewards.</i>	
labelled data	Data with the correct answer attached.	<i>Labelled data is needed for supervised learning.</i>	
training data	Data used to teach a model.	<i>The model used 10 000 images.</i>	
neural network	A model made of connected nodes, inspired by the brain.	<i>A neural network has layers.</i>	
input / hidden / output layer	The layers of a neural network.	<i>The hidden layer finds patterns.</i>	

Keyword	Meaning	Example sentence	In my language
deep learning	Machine learning using neural networks with many hidden layers.	<i>Deep learning is used for image recognition.</i>	
back-propagation	Adjusting weights by sending the error backwards through the network.	<i>Back-propagation improves the network.</i>	
regression	Predicting a number from data.	<i>Regression can predict house prices.</i>	
classification	Putting data into categories.	<i>Classification decides if an email is spam.</i>	
bias	Unfair results caused by unfair training data.	<i>Bias in training data causes unfair decisions.</i>	
ethical implications	The moral issues caused by using technology.	<i>AI has ethical implications for jobs.</i>	
transparency	Being clear about how a decision was made.	<i>Deep learning lacks transparency.</i>	