Artificial Intelligence classmate

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Date

Page ARIALI MCAA 2100290140040 Assignment-1 For each of following agents, bevelop a PEAS bescription of the task environment Performance Environment Actualors Sensors Measure Robol Societ Toplay, make Team Members Movigotor legs Comm.l Player goals win the opponents, refree, of Robot, views sudience, soccer betector field Quentation Internet Price Quality, Covered and Juture book-shopping appropriateness, WWW sites vendors agent efficiency shippings display toused HTML pages (tut, graphice scripts wheele samples Comers, motion devices Touch scree Collect analyze & velicle, Mon Buterromous explore sanfred Mas Mars rover receive Dieflay tower, sucht the right theorem. Mathematicism's Communey theorem proving assistant Measwas New theorem Siscovered line regionanal

2. Both the performance measure and the utility functions
measure how well are agent is doing.

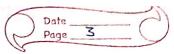
Ordline the differences by the two? A performance meseure (typically imbosed by the behavior of designer) is used to evoluble the behavior of ogen in environment.

It fells does agent do what its suffere to be in the environment. A while function is used by an agent environment. A while function is used by an agent itself to evaluate how besirable states are. Some paths to the good sae better than others The utility function may not be the same as the servermance measure.

A. In agent may have no explicit utility function at all whoses there is always a performance measure. A state contains all of the information necessary to predict the effects of an oction and to

Setermine if it is a goal state.

One general formulation of intelligent action is
in terms of state. It is a process used in the field of in which successive stoles of an instance



#	
	a goal state with the interntion of finding
-	a goal state with the desired property.
	San al Trans
	Search Tree:
	search bree is a tree data structure
	grand for locating specific keys from within a set.
-	A search bree is a tree data structure used for locating specific keys from willing a set. In order for a tree to fundion as a search tree.
	Social Apple
-	The soot made is the state and the
-	set of children los ench mode consiste of states
-	reachable by taking any action while notes in
-	The root node is the stort state and the set of children for each node consists of states reachable by taking any action while nodes in this tree are called search nodes.
Contract of the last	E alternation to the A. T. C.
-	y.
-	(a) Breadth First Search is a special case of
	(a) Breadth First Search is a special case of uniform cost search.
-	Breath first search is a special case of uniform
	Breath first search is a special case of uniform cost search when all the steps costs are equal.
	eg's Cost function in UCS = c(x') = c {x} + b(x, x') 0
	The same of the sa
	Get function in A*: F(x') = F(x) + d(x, x') + (H(x')
	M(x) = -(S)
-0.	De Charles de mande de colonialem dans la desarra
_	substitute $H(x) = 0$ for all modes $X$ substitute $H(x) = 0$ , in eq. (2)
_	substitute $H(X) = 0$ , in egn (2)
	we get +(X') = F(X)+ d(X,X') + LO-0]
	where F(N = rost of reach state X.
	Henra P(X) = C(X)
-	Thus, A* becomes UCS if hevristic cost of every node is O

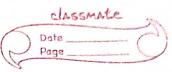
So, UCS is a special case of A\* algorithms. (b) Depth first search is a special case of best first tree search Brendth First search is best first search with

\[
\begin{align\*}
\lefth(n) = \lefth(n) \\
\end{align\*} c) Uniform-cost search is a special case of A\* search Cost function in A\* & F(X) + &(X, X') + [H(X')-H(X)]-Cost H(X)=0 for all nodes X. whetitute H(X) = 0 in equation (2)

we get F(X') = F(X) + L(X, X') + LO-OThere F(X) = cost of result state X.

Hence, F(X) = C(X)Thus, A\* becomes UCS if hevristing rost of every nose is O. So, UCS is a special case of A\* algorithms. Evaluate the effect of over-estimation and under-estimation of it on A\* algorithm.

With underestimating A\* will only stop exploring a potential path to the goal once it knows that the total cost of the path will exceed the cost of a known path to the goal. Since the estimate of a paths cost is always less than or



	egyal to the pothe real cost, A* can biseagh a path as soon as the estimated rost excepts the lold cost of a known path.  With overestimation A* has no isea when it can stop exploring a potential path as there can be paths with lower lactual cost higher estimated cost than the best currently known path to the goal.
	as soon as the estimated rost excepts the hald cost of a
	known path.
	With overestimation A+ has no idea when it can stop
	exploring a potential pathos there my be paths with
	lower Jactus Cost ligher estimated cost than the
	best governtly known path to the sont.
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Reference was to be designed.	