Karjat - Raigad

Date :

Assignment NO:- 1 B

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Sem :- VII / I.T

Subject:- A.I

DOA	DOP	Remark	Sign

Date :

Assignment NO:- B.

Explain PEAS descriptor WVMPVS Worlds

→ i) Pep performance measure
+100 for grabbing the goad & coming back to start.
-200 if the player is killed
-1 per action
-10 for using the arrow

ii) Environment
Empty Rooms
Room with WVMPS
Room neighbouring to WVMPS which are smelly
Room with bottomless pits
Room neighbouring with bottomless pits which are breezy.
Room with Gold which is glitery
Arrow to shout the WVMPUS

iii) Sensor cassuming a robotic agent
Camera to get the view
odour Sensor to smell the stench
Audio Sensor to listen to the screen & hump.

iv) ERRectors (Cassuming a robotic eagent)
Motor to move left right
Robot arm to Grab the Gold
Robot mechanism to Shoot the arrow.

the wumps world agent has following characters :-

a) Fully observable b) Deterministic c) episodic

d) Static e) Discrete f) Single agent

Q2 Explain various element of cognitive system.

- Cognitive Computing is a new type of computing with the good goal of more accurate model of how the human brain / mind senses reasons, and respond to stimulus. Generally the term cognitive computing is used to refer to new hardware and /or software that mimic the following functioning of the human brain thereby improving human decision making. Cognitive computing applications link data analysis and adaptive page

- Following are elements of cognitive System :-

a) Interactive :- They may interact easily with users so that those users can define their needs comfortably. They may also interact with other processor

Adaptive :- They may be engineered to feed on dynamic data in real time. they may learn as information changes

Contexual :- They may understand identify and extract contexual element such as meaning syntax location appropriate domain etc.

Iteative and stateful :- They may be in defining a problem by asking question or finding additional source input if a problem statement is incomplete.

3) Write note on language Model.

→ The goal of a language model is to compute a probability of a token e.g a sence sentence or sequence of words and are useful in many different NPL application

language model (LM) actually a grammar of a language as it give the probability of word that will follow.

In case of (LM) the probability of a Sentence as sequence of world is :-

$P(W) = P(W_1, W_2, W_3, \ldots\ldots W_n)$

It can also be used to find the probability of the next world in sentence : $P(W_5 | W_1, W_2, W_3, W_4)$

a) Method using markov assumption :-

A process which is stochastic in nature is said Rohan, the markov property if the condition probability of future states depend upon present state.

Bigram Model ($K=2$) :-

$$P(w_i / w_1 w_2 \ldots w_{i-1}) = P(w_i / w_{i-1})$$

$$(w_1 / w_{i-1}) = \frac{\text{count}(w_{i-1} \ldots w)}{\text{count}(w_{i-1})}$$

4) Write a note on Machine Translation

Machine translation is classic test of language understand
It consist of both language analysis and generation. many machine translation System have huge commercial use Following are few of the examples:-
Google Translate goes through 100 billion words per day.
EBay uses Machine translation techniques to enable cross border trade and Connect buyers / Sellers around globe
Facebook uses (MT) to translate text in post and comments automatically in order to break language barriers.

System become the first s/w provider to launch a Neural Machine Translation engine in more than 30 languges in 2016
Microsoft brings AI-powered translation to end user & developers on Android

In a tradisional machine transachion System parallel corpus a collechion of trees is used to each of width is translated into one or more other language than the original for example given the source, language eg. French and the target language English multiple statistical model needs to be build including a probatilis tic formulation using the a Rule a translation model P(f) e trained on parallel Corpus and a language model P(e) trained on the English corpus.

IT is obious that, this approch skip hundred of important detail requires a lot of human Reature engineering and is overall a Complex system.

Q5) Explain the following terms :-

a) Phonology :-
IT is the study of organizeing sound systematically In a NLP Natural language processing) System.

b) Morphology :-
IT is a study of constrution of word from primitive meaningful units.

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c) Lexical ~~Ana~~ Analysis :-

Lexicon is the words and phrases in language. lexical analysis deals with the recognition and identification of structure of sentence

d) Syntatic Analysis :-

In Syntatic Analysis the sentence are parsed a noun verb, adjective & other part of sentence. In this phase the grammer of the sentence is analysed in order to get relationship among different word in sentence For eg → "Mango eat one" will be rejected by analyser.

Word sense disambiguation

While using words that have more than one meaning we have to select the meaning which make the most sense in context. for example, we are typically given a list of word associated word sense e.g from a dictionary or from an online resource, such as word net