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Section: D

Semester: 5th

Date: 15/sept/2020

Subject: Artificial Intelligence (IBM-501)

Q3

Machine Learning is a concept which allows the machine to learn from examples and experience, and that too without being explicitly programmed. So instead of writing the code, what we can do is to feed data to generic algo, and the machine builds the logic based on given data.

Machine learning is trained using a training dataset to create a model. When new input data is introduced to ML algorithm, it makes a prediction on basis of model.

The prediction is evaluated for accuracy, and if accuracy is ~~an~~ acceptable, the ML algorithm

is deployed. Otherwise, ML algorithm is trained again & again with augmented training data set.

→ There are 3 types of Machine Learning:

(i) Supervised Learning:

It is the one, where you can consider learning is guided by the teacher. We have dataset which act as teacher and its role is to train model or the machine. Once the model gets trained it can start making prediction or decision when new data is given to it.

Ex: Linear Regression for regression problems

(ii) Unsupervised learning:

In this model trains through observation and find structures in data. It automatically finds patterns and relationship in dataset by creating cluster on it.

Example: K-means for clustering problems.

(iii) Reinforcement Learning:

It is the ability of agent to interact with environment and find out what is best outcome. It follows concept of hit and trial method. The agent is rewarded or penalized with a point for a correct or wrong answer. And again once trained ~~it~~ it gets ready to predict new data presented to it.
Ex: Cat is an agent that is exposed to environment

Q5

S1: login to your IBM cloud account

S2: Goto search bar and search for text to speech and click on it.

S3: You will be with the new page then select region as london and choose lite plan and click on create button which is in right hand side

S4: You will be promoted into the new page, goto getting started tab and open the Git bash or any other terminal which supports bash and check for curl version with

curl -v command.

S5: If curl version shows up you are ready but if it doesn't show any version then you might need to reinstall curl.

S6: In the getting started tab at the top click on show credentials so that we don't need to copy paste our credentials again & again.

S7: Goto S1 in getting started tab and copy the curl command as we have turned on show credentials so we don't need to change anything.

S8: Copy the whole command in terminal or git bash and then a file with name hello-world.wav will be created on computer.

S9: When you open the file it will read the text which was passed with curl command.
i.e. - "helloworld".

S10: That's how we can create and run text to speech Watson service using CURL.

Q4

Computer vision is a field of computer science that works on enabling computers to see, identify and process images in same way that human vision does, and then provide appropriate output to computer. In reality though, it is difficult task to enable computers to recognize image of different objects. It is closely linked with AI as the computer must interpret what it see and then perform appropriate analysis or act accordingly.

History of CV and Advancement with AI
In the late 1960's, CV began at universities which were pioneering AI. It was meant to mimic human visual system. It distinguish CV from prevalent field of digital image processing. Studies in 1970's formed the early foundations for many of CV algorithms that exist today which includes extraction of edges from images, labelling of lines etc. The next decade saw studies based on more vigorous

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mathematical analysis and quantitative aspect of CV. Towards the end of 1990s, a significant change came about with increased interaction b/w fields of computer graphics & CV and currently with AI deals with autonomous planning deliberation for robotic systems to navigate through an environment. A detailed understanding of these environment is required to navigate through them. Info about the environment could be provisioned by computer system.