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Class: Analyse the relationship between A.I. and Other Disciplines

Goal: understand how A.I. techniques are used in or relate to other areas (3 hours)

For this activity, you have to research the following questions by yourself. You can use any resource you like.

1) Describe in your own words what is intelligence and how can you recognize it.

The approach suggested by Russell and P. Norvig that Artificial intelligence is development and application of the know as "intelligent agents", which can be identified as entities that perceive its environment and takes actions that maximize its chance of successfully achieving its goals.

2) Search for competitions related to A.I. e.g., DARPA challenges or RoboCup. Explain briefly what they are and how they relate to A.I. (What techniques they use? Do they show intelligence? What is their real purpose?)

There are a lot of competences and challenges related to AI, the most known is the Google's Kaggle Problems, Machine Intelligence Prize from The Computer Science Technology from the British Computer Society, Federal Virtual World Challenge by the US Government.

Most of these competitions are backed for big industries looking for a technique capable to improve its revenue or governments around the world looking for a better way to achieve their goals.

All the techniques used are described by the model classification suggested by Russell and P. Norvig, either simple reflex agent, model-based reflex agents, goal-based agents, utility-based agents, learning agents.

Its applications go from adaptive learning systems, intelligent conversational bots, adaptive behaviour (objects or processes) and autonomous control.

3) Search for a video of IBM Watson and analyse what it can do. Could you do this with regular programming – yes or no? Could you consider Watson intelligent?

According to IBM, Watson provides a different approach to solve the problems presenting a Cognitive Learning, where the agent is capable to observe, interpret, evaluate and decide in order to get the best outcome. I saw the video of IBM Watson playing Jeopardy, it is impressive the way in can process all the info and be capable of getting a correct answer especially because of the speed, that cannot be achieved by a regular programming way, because as we have seen it will take a lot of time to process all the info acquired.

Yes, I consider it as intelligent as it intends to have the best outcome, considering time and external factors.

4) Search for 2 everyday apps that you use that have A.I. components. Describe how they work. Are they intelligent?

• I use every day Siri to set Up my alarms for the next day: It is a complicated process all that is around Siri, first of all, the activation through Voice Recognition, the pattern identification around the message, then the response to the user and finally the confirmation of the command.

• Also, almost diary tend to use the Spotify's feature called "Daily Mix" or Google's Mix and search engine, that (simplified) uses data that have collected to present or expose ideas, songs or result that may result interesting to user similar to you, this by the use of agents and data that have been collected from user all around the world even without them to notice.

5) Complement your original description 1), with new or more specific elements you find out after researching points 2, 3 and 4.

6) What is the relationship between Data Science and Artificial Intelligence?

Is fundamental the data manipulation and analysis that is involved in the Data Science, because it is this information that allows us to model and test hypothesis bases on them. Also depending on the kind of agent proper management and use of this can imply an improvement on the execution of the task.

References

[1]S. Russell and P. Norvig, Artificial intelligence, 3rd ed. 2010: PearsonEducation,Inc., 2010.
[2]"How It Works: IBM Watson", YouTube, 2019. [Online]. Available: https://www.youtube.com/watch?v=AtdJ1DGJjXA. [Accessed: 22- Jan- 2019].
[3]"IBM's Watson Supercomputer Destroys Humans in Jeopardy | Engadget", YouTube, 2019. [Online]. Available: https://www.youtube.com/watch?v=WFR3lOm_xhE. [Accessed: 22- Jan- 2019].