**This is a graded activity - due Friday, September 17, 2021 at 11:59pm**

Answer the following questions in a single post. Pay attention to grammar, word limits, and making correct citations.

1- In your own words, briefly, what is meant by "Computability". (200 words max) [1 pt]

Computability describes how feasible a given computing problem can be solved with available computing resources within finite time, it indicates the possibility as well as meters the degree of difficulty.

2- What is meant by "P", "NP", "NP-Hard", and "tractable"? (400 words max) [1 pt]

P stands for problems that are solvable via deterministic Turning machine with polynomial amount of time; NP means a set of problems solvable by Non-deterministic Turning machine with polynomial amount of time; NP hard stands for a level of difficulty of a problem, that is at least as hard as the hardest problem in NP; Tractable means a problem can be solved with an algorithm in polynomial time.

3- List the names of three applications for AI to solve that are not tractable with a brief explanation as to why this is the case. [1 pt]

Apple’s Siri, Tesla’s autonomous car driving system, and face recognition applications using computer vision deep learning, they are all intractable because they are using deep learning neural networks which involves nondeterministic algorithms that are not polynomial-time algorithms.

4- Today many scientists have the dominant belief that AI is really all about "Machine Learning", however, many classic AI scientists argue that this is not the case! ML is merely part of the broader field of AI. Do you believe AI is all about ML? Justify your answer with at least 2 citations from refereed literature. (300 words max) [2 pts]

AI is not all about Machine Learning, instead ML is just a subset of AI, or one of the approaches to achieve Artificial Intelligence. Citations:

1. While machine learning is based on the idea that machines should be able to learn and adapt through experience, AI refers to a broader idea where machines can execute tasks "smartly."
2. Artificial Intelligence applies machine learning, deep learning and other techniques to solve actual problems. [1]

References:

https://www.sas.com/en\_ca/insights/articles/big-data/artificial-intelligence-machine-learning-deep-learning-and-beyond.html

Total 5 pts.

Rules: You must write in your own words and use proper citation as appropriate. Plagiarism will not be tolerated. Feel free to read and comment on the posts of other students. Do not copy anyone's answer, if that is detected the one who did the first post will prevail and the rest will be considered plagiarized.