[9]Friday Funnel

Click the Check Box to Confirm our Answer!
To simplify, Write CONFIRMED Answers at the bottom!

Question #1 : what is AI what is machine learning and what do the two have to do with each other ?

☑

- AI is the field involving machines demonstrating advanced, human-like intelligence via the use of super advanced algorithms
- AI - involved with building smart machines capable of performing tasks that typically require human intelligence
- ML is a subfield of artificial intelligence and is one way to use AI
- ML trains a machine how to learn
- Artificial intelligence is intelligence demonstrated by machines, as opposed to the natural intelligence displayed by animals including humans.
- Machine learning gives the computer system the ability to learn from data
- **AI** is a branch of computer science attempting to build machines capable of intelligent behaviour, while Stanford University defines machine learning as "the science of getting computers to act without being explicitly programmed
- Artificial intelligence and machine learning are very closely related and connected. Because of this relationship, when you look into AI vs. machine learning, you're really looking into their interconnection.
- AI is machine learning but machine learning does not have to be AI

CONFIRMED:

- AI is the field involving machines demonstrating advanced, human-like intelligence via the use of super advanced algorithms
- Machine learning is a subfield of AI that gives the computer system the ability to learn from data

Question #2: What is an algorithm and what does it have to do with machine learning

☑

- An algorithm is a set of instructions used for calculating or problem solving that allows machines to do a specific task
- Algorithm's are what turn data sets into models and can be improved to create newer algorithms which are a part of the machine learning.
- An "algorithm" in machine learning is a procedure that is run on data to create a machine learning "model." Machine learning algorithms perform "pattern

recognition.” Algorithms “learn” from data, or are “fit” on a dataset. There are many machine learning algorithms.
- Machine learning uses algorithms to learn to do a complex task (e.g. classifying dog pictures) in an easy and convenient way

- a process or set of rules to be followed in calculations or other problem-solving operations, especially by a computer.

CONFIRMED:
- Algorithms are step by step instructions that allow machines to do a specific task that is exactly what we said.
- An “algorithm” in machine learning is a procedure that is run on data to create a machine learning “model” to do a complex task (e.g. classifying dog breeds).

Question #3: Name at least one benefit and one problem with machine learning

☑

Benefits:
- Easily identifies trend and patterns
    - Machine Learning can review large volumes of data and discover specific trends and patterns that would not be apparent to humans.
- More people could do more meaningful things instead of redundant work.

Problems:
- AI can be expensive to implement as the costs of building, maintaining, and upgrading software can accumulate quickly.
- High error-susceptibility and bias
- ML algorithms are difficult to train properly, you need to find a perfect balance between having high accuracy on a specific dataset and generalizing for all data not in the dataset, otherwise you get underfit and overfit models
- It requires a great amount of data from people to make sure it could easily understand how to execute the task, but it is hard to make sure the whole process is legal. It is hard to find a company or organization which is reliable for the whole world. They may use the data for themselves to make profit.
- thx

CONFIRMED:
- Benefit: More people could do more meaningful things instead of redundant work.
- Problem: It requires a great amount of data from people to make sure it could easily understand how to execute the task, but it is hard to make sure the whole

process is legal. It is hard to find a company or organization which is reliable for the whole world. They may use the data for themselves to make profit.

Question #4: Propose a test with at least 3 questions a judge could use to determine if the results of a machine learning algorithm should be accepted in court

☑

- Does it do its job accurately, and does the model generalize well on other datasets?
- Does this ML algorithm only bring social good or does it come with ethical issues?
- How much time and resources do we need to train this ML algorithm?
- How sensitive is the data that this ML algorithm trains on?

Answers (Simplified):

1. **AI** is **Artificial Intelligence**, and it allows machines to think like humans. Machine learning is a **subfield/application** of AI that gives computer systems the ability to learn from data. Machine Learning involves AI/computers **learning how to improve and teach themselves** to do more complex, human tasks.
2. **An algorithm** is a set of instructions that allows machines to do a specific task. Machine learning **learns** from data using algorithms to make conclusions from that data, and this allows it to make new and unexpected conclusions from other data.

3. ADVANTAGES

- It can easily identify patterns from very large data sets which humans cannot do realistically and efficiently.
- It keeps improving overtime with larger data sets and more processing and so it will eventually be better than humans.
- It allows humans to leave mundane, redundant tasks to machines to do more productive work.

DISADVANTAGES

- It needs a large data set to be accurate and thus incentives companies to collect more data on users, leading to less privacy for the people.
- It needs a lot of resources as it takes a lot of processing power and energy which leaves a mark on the environment.

4. QUESTIONS

a. Does the ML do its job accurately, and does it generalize well for all data of this type?
b. Does this ML algorithm only bring social good or does it come with ethical issues?

c. Does the ML violate any privacy regulations?
d. How much time, resources, and data do we need to train this ML algorithm?
e. Was the data for the ML model ethically collected?