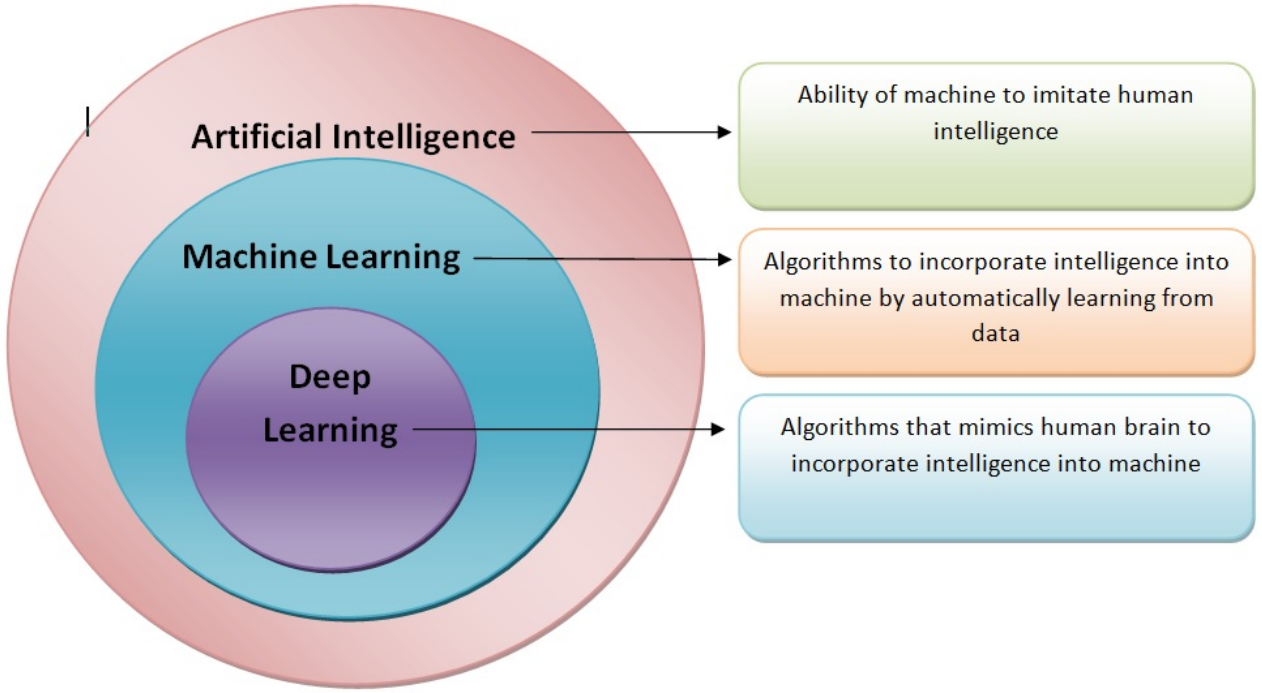
*I.LINEAR REGRESSION:

DAY 1 MACHINE LEARNING INTERVIEW QUESTIONS:



- Befoe going to start machine learning algorithms

- AI vs DL VS ML VS DS
- AI VS DL VS ML VS GEN AI

Artificial Intelligence (AI)

- Definition: AI is the broad field of creating machines that can perform tasks that typically require human intelligence.
- Example: A robot that can navigate a room, avoiding obstacles and finding a path to a destination, mimicking human decision-making.

Machine Learning (ML)

- Definition: ML is a subset of AI that involves training algorithms on data so they can learn to make decisions or predictions without being explicitly programmed.
- Example: A spam email detection

Deep Learning (DL)

- Definition: DL is a subset of ML that uses neural networks with many layers (deep neural networks) to model complex patterns in data.
- Example: Image recognition software that can identify objects in photos, like recognizing cats and dogs, by training on millions of labeled images.

Generative AI

- Definition: Generative AI involves algorithms that can generate new content, such as text, images, or music, based on the patterns learned from the training data.
- Example: A text generation model like ChatGPT that can write essays, stories, or answer questions based on the patterns it learned from a vast amount of text data.
- *Summary with a Simple Example:*
- AI: The overall goal of creating intelligent machines (e.g., a smart robot).
- ML: The techniques used for the machine to learn from data (e.g., a spam email classification .

- DL: A specific type of ML using deep neural networks (e.g., an image recognizer).
- Generative AI: AI that creates new content (e.g., a text generator like ChatGPT).

Data Science

- as the comprehensive field that encompasses the collection and analysis of data, and uses AI, ML, DL, and Generative AI as tools and techniques to derive meaningful insights and make informed decisions.
- The overall process of extracting insights from data

Classification of Machine Learning Algorithms categorized into three types:

- Supervised Learning
- Unsupervised Learning
- Reinforcement Learning

What is supervised learning?

Answer: Supervised learning involves training a model on labeled data, where the input data has corresponding output labels. The model learns to predict the output from the input data.

- EX:linear regression ,logistic regression

Unsupervised Learning

Definition: Algorithms are trained on unlabeled data. The model tries to find patterns or structures in the data.

- Example: K-Means Clustering: Grouping customers based on purchasing behavior.

Reinforcement Learning?-homework

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Start coding or generate with AI.
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