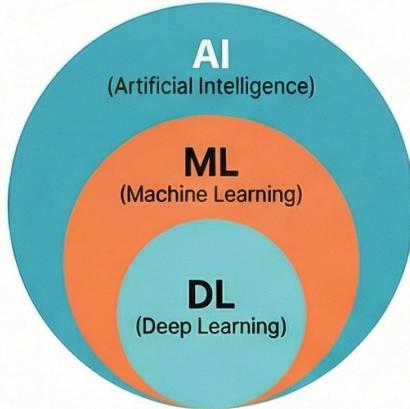


From Data to Decisions: The AI Learning Pyramid

AI > ML > DL: A Nested Relationship

AI is the broad field, ML is a subset that learns from data, and DL is a subset of ML using neural networks.



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Data Bias Is a Critical Challenge

If training data is biased, an ML model will produce unfair or biased results.

1. DATA: Raw Symbols



Unorganized signals without context, like the number "101".

2. INFORMATION: Data in Context



Data that answers What, Who, Where, When.
Example: "A patient's temperature is 101°F."

3. KNOWLEDGE: Recognizing Patterns (Machine Learning's Role)



Compares information to a standard to identify meaning.
Example: "101°F is a fever."

4. INTELLIGENCE: Taking Action (AI's Role)



Actively applies knowledge to achieve a goal.
Example: "Administer medicine to lower the fever."

5. WISDOM: Understanding 'Why'



Seeks the root cause beyond the immediate problem.

Example: "The recurring fever is a symptom of an underlying infection."



SUPERVISED:
Learning with a teacher
From "labeled" data (input + correct answer).



UNSUPERVISED:
Finding patterns in a crowd
Finds hidden structures in "unlabeled" data.



REINFORCEMENT:
Training a dog with treats
Through trial and error to maximize a "reward."