



PRESIDENCY SCHOOL

Keynotes

Grade: IX

Subject: Artificial Intelligence

Month: March & April

Topic: AI Reflection , Project Cycle and Ethics

What is Artificial Intelligence?

Artificial intelligence is a technology that enables computers and machines to simulate human intelligence and problem-solving capabilities.

Domains of AI

There are 3 major domains in AI:

1. Data Sciences (DS)
2. Computer Vision (CV)
3. Natural Language Processing (NLP)

I. AI Project Cycle Phases

a) Problem Scoping

- Identify the problem and define the goal.
- *Example:* Identifying students who need help with studies using AI.

b) Data Acquisition

- Collect relevant and sufficient data.
- *Example:* Collecting student performance data for analysis.

c) Data Exploration

- Analyze and visualize data to understand patterns.
- *Example:* Plotting graphs to find trends in student scores.

d) Modelling

- Build and train the AI model using data.
 - *Example:* Training a model to predict students who may need tutoring.
 - **Choose a pre-existing model**
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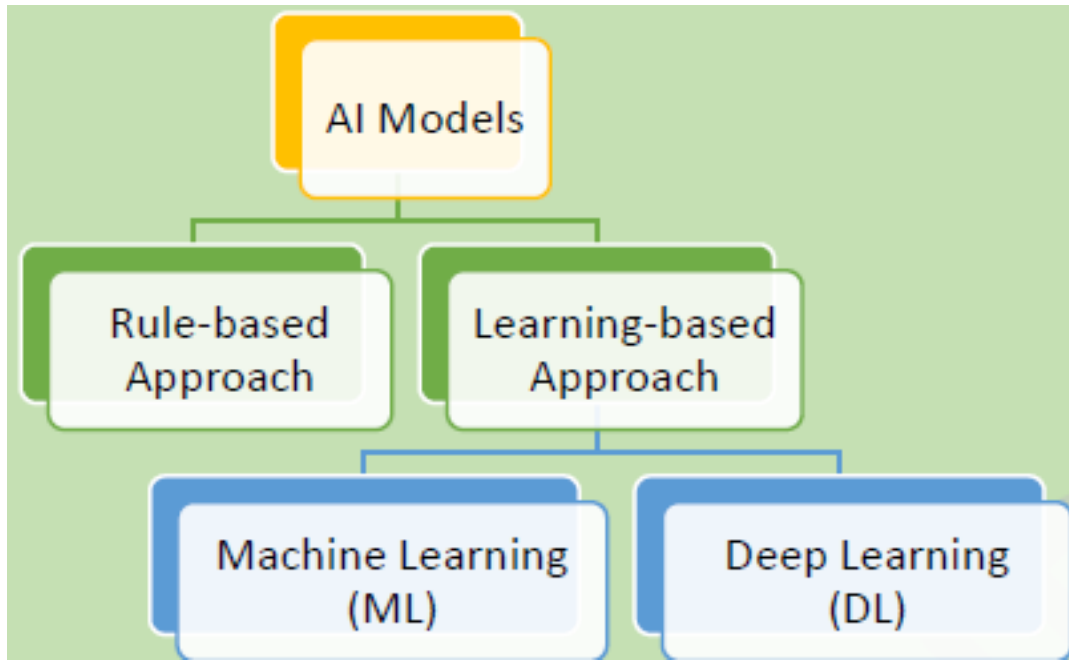
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- A. **Rule-based AI Approach:** Relationships or patterns in data are predefined and algorithm follows the rule or instructions mentioned and perform the tasks accordingly.
- B. **Learning-based AI Approach:** In Learning based AI model, the machine gets trained on the data fed to it and then can design a model, adaptive to the change in data. Implementation through: Classification of images, used in Computer Vision.



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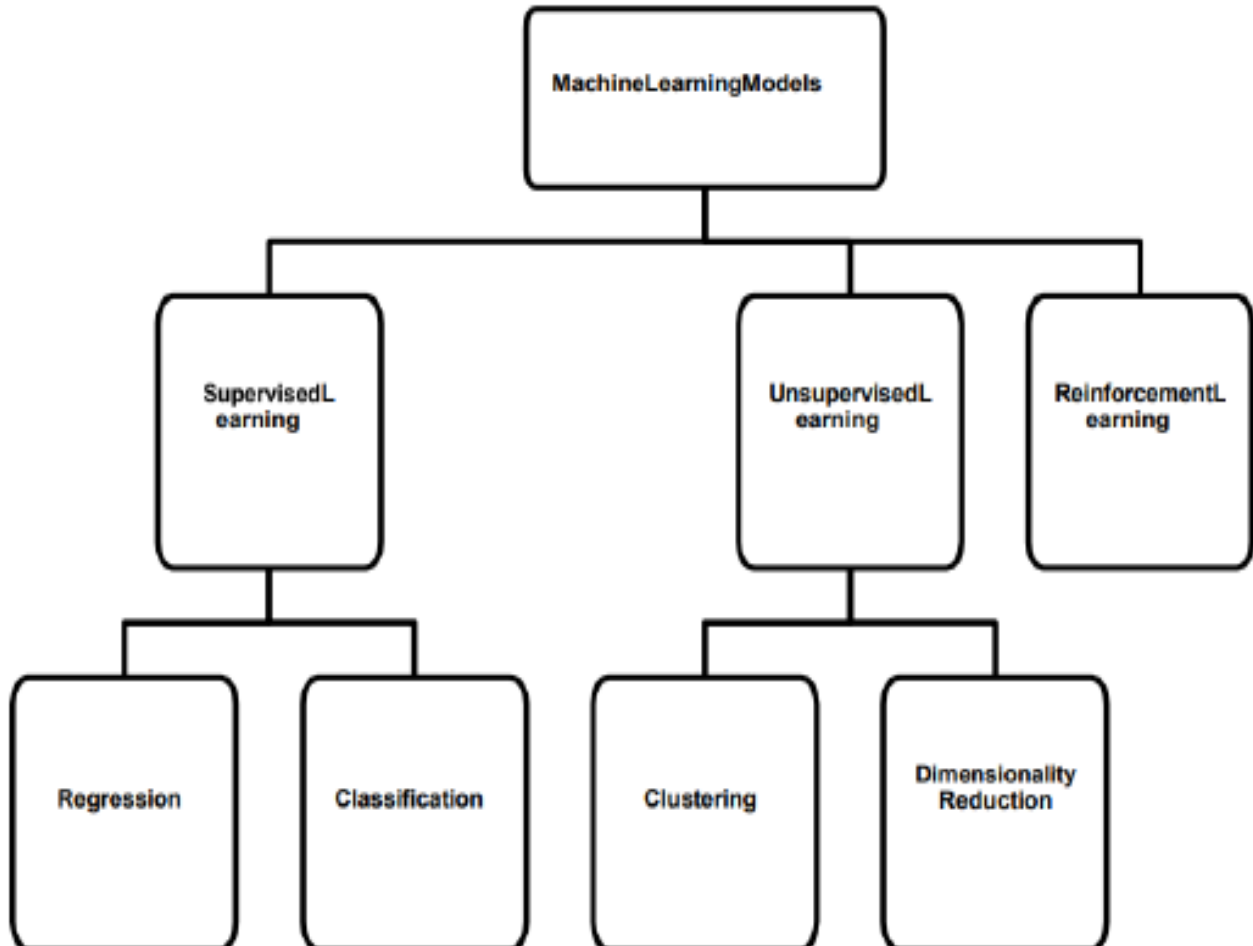
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e) Evaluation

- Test and validate the model for accuracy.
- *Example:* Checking if the model accurately identifies students needing assistance.
- The model is tested with the help of Testing Data (acquired during Data Acquisition stage) and the efficiency of the model is calculated based on the parameters mentioned below:



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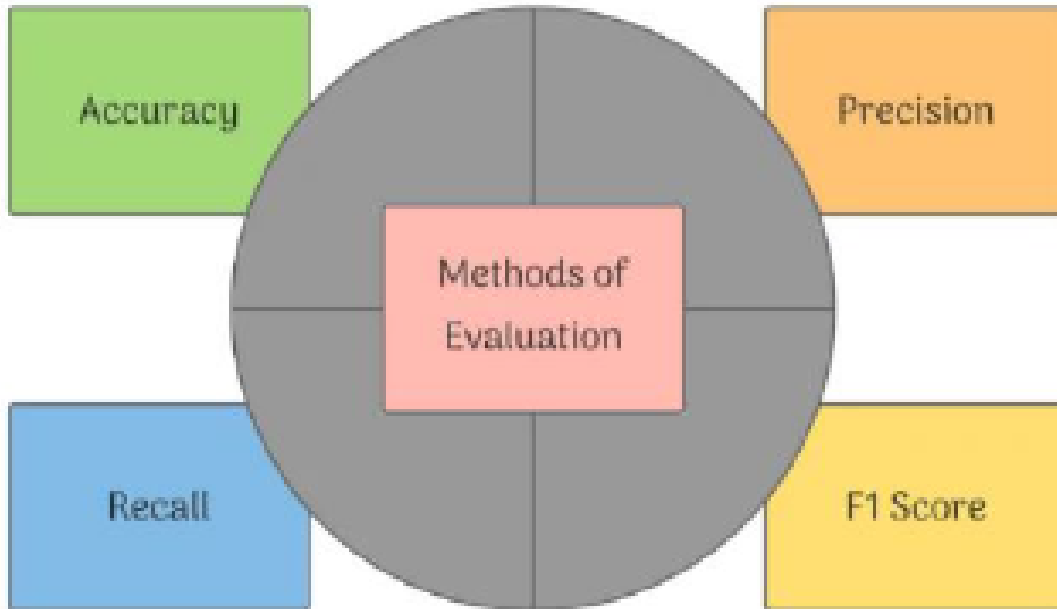
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II. Ethical Concerns in AI

a) Privacy

- Protect user data and maintain confidentiality.
- *Example:* Hiding student names in a performance analysis report.

b) Bias and Fairness

- Ensure fairness and avoid discrimination.
- *Example:* Ensuring a loan approval model treats all applicants equally.

c) Transparency

- Make AI systems understandable to users.
- *Example:* Explaining how a recommendation system works.

d) Accountability

- Take responsibility for AI decisions.
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- *Example:* Ensuring the developers are accountable if an AI model makes biased decisions.

e) Security

- Protect AI systems from cyber threats.
- *Example:* Preventing hacking attempts on AI-powered devices.