Supervised ML Workshop

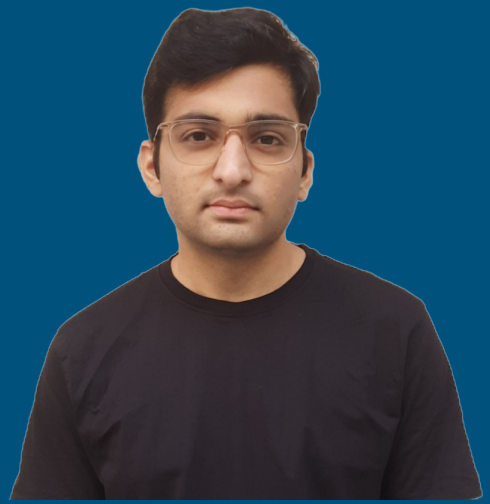
DIT Pimpri

A workshop by Atharv, Ayush, Yash

Agenda for Workshop

Supervised Machine Learning

1. Overview of ML
2. Linear Regression
3. Logistic Regression
4. Decision Trees
5. Ensemble Methods – Part 1:
    - Cascading
    - Stacking
6. Ensemble Methods – Part 2:
    - Bagging
    - Boosting



Atharv

AI/ML Developer

GDG DIT - Machine Learning Lead

Works with the AI team at ElevateTrust.AI

Always learning, building, and sharing

Passionate about AI, ML, Generative AI, EdgeAI

Ayush

AI/ML Developer

GDG DIT - Machine Learning Co-Lead

Turning data into insights with ML & AI, one model at a time.

Building apps where Machine Learning meets real-world impact.

Speedcuber — learned algorithms from cubes, patience (and suffering) from code.

Yash

AI/ML Developer

GDG-DIT Research Lead

Ex CP Member Lead

Ex Intern Accenture

Passionate about innovative tech

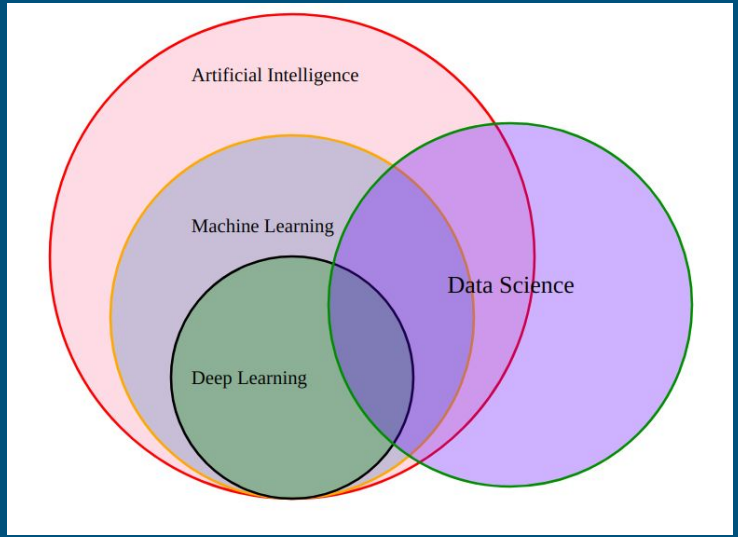
Forever Student

What is ML?

Machine Learning is a way to make computers learn from data without explicit programming.

AI vs ML vs DL vs DS

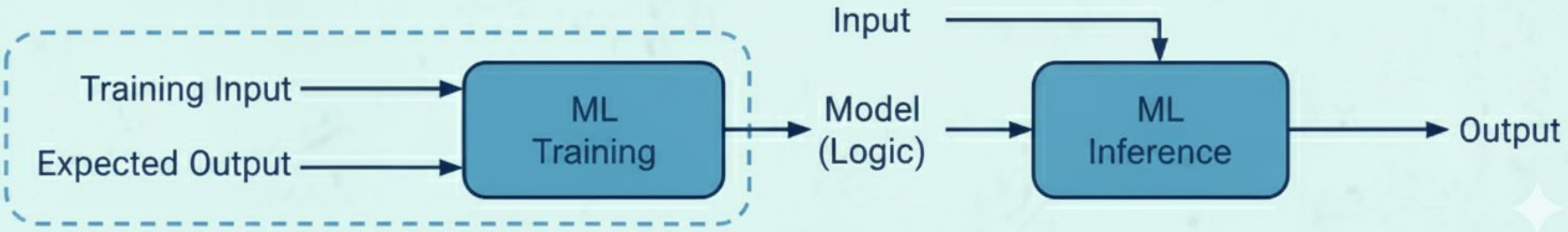
1. AI: Machines doing tasks that need human intelligence.
2. ML: Machines learning from data without being explicitly programmed.
3. DL: ML using deep neural networks to learn complex patterns.
4. DS: Using data and ML to gain insights and make decisions.



Traditional Programming vs ML

Traditional Programs: Define algo/logic to compute output

Machine Learning: Learn model/logic from data



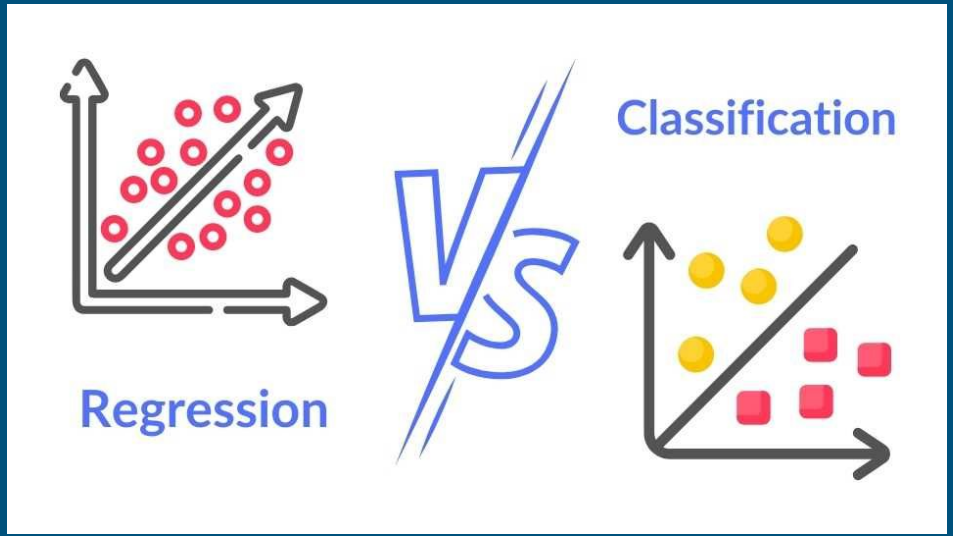
Types of ML

1. Supervised Learning: Learns from labeled data to predict outcomes (e.g., spam detection).
2. Unsupervised Learning: Finds patterns in unlabeled data (e.g., customer segmentation).
3. Reinforcement Learning: Learns by trial and error to maximize rewards (e.g., game AI).

Types of Supervised Learning

1. Regression: Predicting a continuous value (e.g., house price, temperature).

2. Classification: Predicting a category or class (e.g., spam/not spam, pass/fail).



Why ML?

Write a Program to find if a Number is Even or Odd.

Do we need ML for it?

If Number % 2 == 0 -> **Even**

If Number % 2 != 0 -> **Odd**

Simple IF-ELSE rule -> no ML needed

Will I Like Qawali?

Genre	Tempo	Mood	Star Singer	Dance Number	Like
Romantic	Slow	Emotional	Yes	No	Yes
Item Song	Fast	Energetic	No	Yes	Yes
Classical	Slow	Calm	Yes	No	No
Party Track	Fast	Fun	Yes	Yes	Yes
Sad Song	Medium	Melancholic	No	No	No
Qawwali	Slow	Calm	Yes	No	???

“If you can’t code the rules, you use ML to learn them.”

Why ML is Sometimes Unpredictable

- ML learns patterns from **data**, not fixed rules.
- **Different training runs -> slightly different models**.
- Predictions are **probabilistic**, not 100% guaranteed.

Example: Weather prediction: *“It might rain: 70% chance”*.

Use Cases

What did you do today ?

Who unlocked their phone with their face or fingerprint?

Who watched a video recommended to them on YouTube or scrolled through a 'For You' page on Instagram ?

Who used Google Maps to check traffic on the way here?

Who has ever seen a 'Customers who bought this also bought...' suggestion on Amazon?

Who got an email and it went straight to the 'Spam' folder instead of your inbox?

Person: What episode you are on now?
Me: I'm on episode 2
Person: Oh that's not so bad
Me: In Season 5
Person: But you just started yesterday

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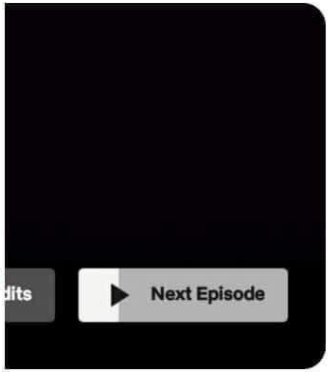
"just one more episode"

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2009
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PAY TO THE ORDER OF: BellKor's Pragmatic Chaos
$ 1,000,000 00
AMOUNT: ONE MILLION 00/100
FOR: The Netflix Prize
Reed Hastings

Self Driving Car


NIGERIAN PRINCE NEEDS $100K?
WHERE'S MY CHECKBOOK?


The very generous Nigerian prince when no one replies to his emails

Assignment

1. Learn about **AlphaGo**
2. Learn about **Google Deepmind** team
3. Explore more **applications and use-cases of AI & ML**


Mujhe ghar jaana hai

Connect with us on LinkedIn

Atharv SP

AI/ML Developer | AI Agents · RAG · LLMs · Generative AI | GDG-DIT AI/ML Lead

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Join GDG DIT - ML Community

Thank You