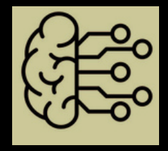
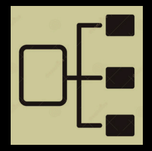
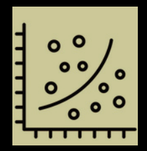
INTRODUCTION TO MACHINE LEARNING:

TOPICS TO COVER

- MACHINE LEARNING 
- TYPES OF LEARNING
- CLASSIFICATION  VS REGRESSION 

BY SIMRAN UPPAL

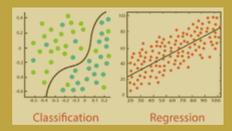
MACHINE LEARNING

- MAKING MACHINES **LEARN THINGS LIKE HUMANS DO**
- SOME TASKS ARE WAY BETTER AND **FASTER** DONE BY MACHINES THAN HUMANS
- A LOT MORE DATA THAN HUMANS TO IDENTIFY PATTERNS AND THEN **DECIDE AND PREDICT ON THEIR OWN**.

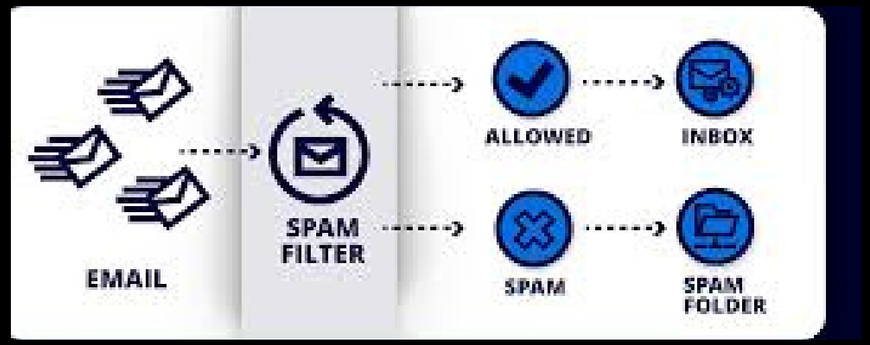
MACHINE LEARNING

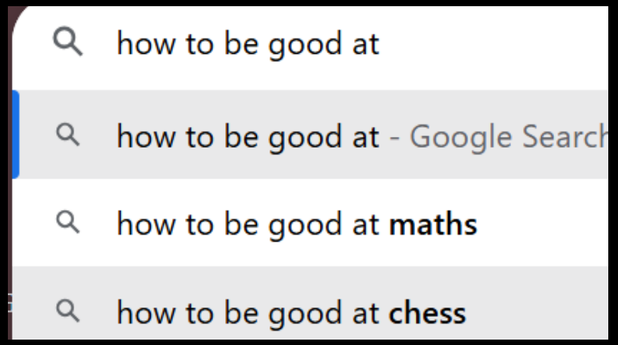
DEEP LEARNING

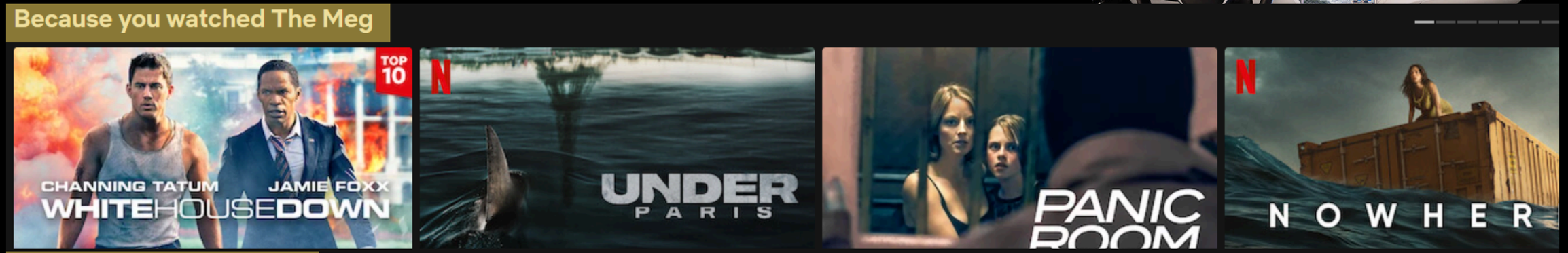
MATHEMATICAL MODELS



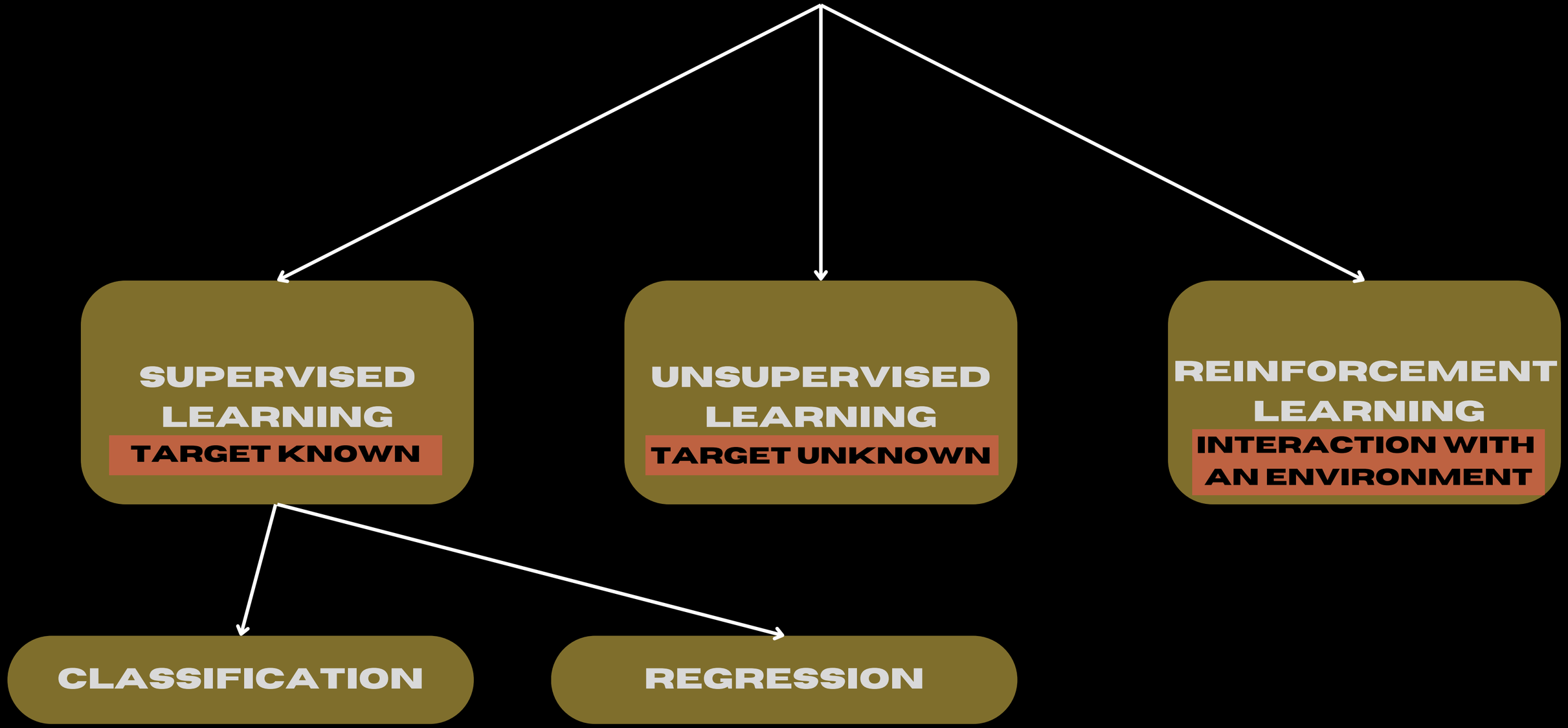
REAL LIFE EXAMPLES







TYPES OF MACHINE LEARNING



SUPERVISED LEARNING

TARGET KNOWN

STUDENT MARKS PREDICTION

INPUT

STUDY HOURS, ATTENDANCE

OUTPUT MARKS OUT OF 100

UNSUPERVISED LEARNING

TARGET UNKNOWN

CUSTOMER SEGMENTATION

AGE, GENDER, LOCATION, TYPES OF PRODUCTS . . .

SEGMENTS

HIGH SPENDERS
BUDGET SHOPPERS
NEW USERS

REINFORCEMENT LEARNING

INTERACTION WITH AN ENVIRONMENT

AGENT

THE CAR

ENVIRONMENT

ROAD, TRAFFIC, SIGNALS

ACTION

SPEED UP, TURN RIGHT . . .

REWARDS/PENALTIES

DESTINATION REACHED, HITTING OBSTACLES . . .

SENTIMENT ANALYSIS

INPUT

A PRODUCT REVIEW

OUTPUT

POSITIVE, NEGATIVE, NEUTRAL

COLD START CASES

NEW USER

NEW ITEM

NEW PLATFORM

SUPERVISED LEARNING

TARGET KNOWN

CLASSIFICATION

- **DISCRETE** PREDICTIONS
- **FINITE** SET OF PREDICTIONS

👉IS THE EMAIL SPAM?

⟶ YES / NO

👉WHAT ANIMAL IS IN THE PICTURE?

⟶ CAT / DOG / LION

REGRESSION

- **CONTINUOUS** PREDICTIONS
- **INFINITE** SET OF PREDICTIONS

👉HOW MUCH WILL THIS  COST?

40,00,000 60,50,000.39 23,04,000 . . .

👉WHAT IS THE AQI OF THIS CITY?

230, 400.56, 20, 500, 300, 150 . . .

THANK YOU!

ANY QUESTIONS?