



# SESSION 3 - TERMS

- Algorithm
- Rational Models
- Empirical Models
- Machine Learning
- Large Language Models LLMs
- Neural Network
- CNNs



# ALGORITHM

- A set of rules or instructions a computer follows to solve a problem.
- You type “best Italian restaurant near me” into Google, and an algorithm decides which results appear first.

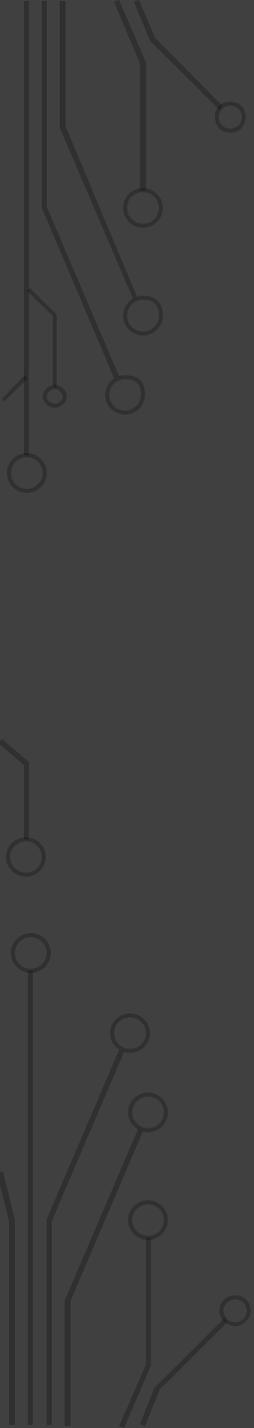


## RATIONAL MODELS

- Mathematical models that choose actions expected to best achieve specified goals, given the available information and assumptions

Deep Blue

Watson



## EMPIRICAL MODELS

- Models trained by data not coding rules
- Patterns learned by many examples to make predictions

AlphaGo



# MACHINE LEARNING (ML)

- A method where computers “learn” patterns from data instead of following fixed instructions. Compare to algorithm.
- Your credit card company alerts you to unusual spending. Machine learning noticed a pattern that didn’t match your normal habits.



# LARGE LANGUAGE MODEL (LLM)

- A type of AI trained on huge amounts of text to generate human-like responses.
- You ask Claude to fact check a news article and point out potential issues.



# NEURAL NETWORK

- A computer design inspired by the human brain, using layers of connections to process information.
- Your phone unlocks when it recognizes your face. That's a neural network.



# CNN

- Convolutional Neural Network
- Deep Learning Model Example
  - Medical Images
    - CT
    - MRI



## TRAINING DATA

- The information (books, websites, conversations, images, audio etc.) used to teach an AI system.
- If an AI was trained before 2025, it won't know about this year's news events.
  - **Some AIs will search Internet in this case.**



## WORLD MODELS

- Internal models an AI system builds of its environment.
- Uses to predict what will happen next.
- Then mentally “try out” actions before acting.

- **Robotics**