



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**



AI TERMS IN THE NEWS

Millenium Prize / Problems

Seven math challenges carrying million-dollar prize awards

Navier-Stokes

AI solved problem related to liquids.

AI Slop

AI generated low-quality, low-effort digital content with little or no human editing.





AI TERMS IN THE NEWS

Recursive Self Improvement

- A feedback loop where AI designs, trains, or codes its own successor.

AI Swarms

AI agents that communicate and collaborate to solve complex tasks.

Rogue AI

- An AI that acts unpredictably, break rules, contrary to programming
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AI TERMS IN THE NEWS

Singularity

Hypothetical point in time when artificial intelligence becomes capable of recursively improving itself, triggering an uncontrollable explosion of superintelligence that alters human civilization.

AI Watchdogs

Proposed independent oversight frameworks—analogue to banking regulators.

