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AI Fundamentals

Agenda

01 AI Hierarchy

02 ML, NLP, GenAI

03 LLM, CNN, RNN

04 AI Development

05 AI Data

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AI Hierarchy

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AI Hierarchy

Overview

- **Artificial Intelligence:** Creating systems that can mimic human intelligence. (Turing Test)
  - General Intelligence – creating something that can learn like a person does.
  - Cognitive Function – simulate reasoning, problem-solving, or creativity.

  AI covers a broad scope, including anything that fits into simulating thinking.

AI Hierarchy

Applications

- **Machine Learning:** A specific approach to developing AI that focuses on using data and algorithms to allow computers to learn from experience and improve their performance on a task.
- **Natural Language Processing (NLP):** The interaction between computers and human language.
- **Computer Vision:** Teaching computers to “see” and interpret images or videos.
- **Robotics:** Creating autonomous physical systems to perform a task.

AI Hierarchy

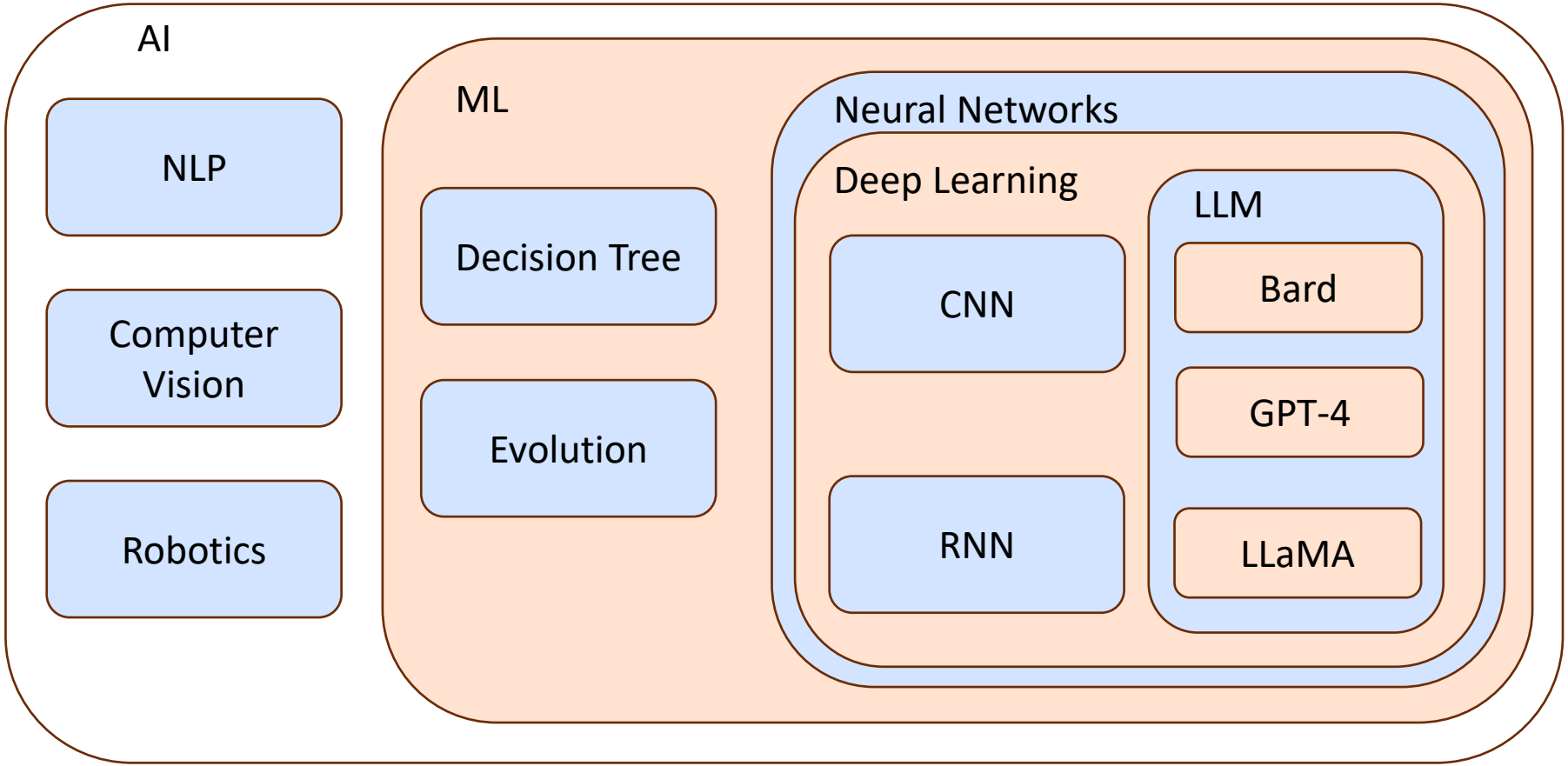
Architectures

- **Neural Network / Deep Learning:** Use a series of layered nodes to analyze data and made decisions.
- **Decision Tree:** A tree like model that is based on predetermined questions.
- **Evolutionary Algorithms:** Replicating natural selection by running many simulations, and choosing the best results of the first test to be the basis (parents) of the next generation of simulations.

AI Hierarchy

Models

- **Large Language Models (LLM):** Based on MASSIVE amounts of data (thus the LARGE), built on Deep Learning architecture with complex connections between nodes/neurons enabling the creation of highly sophisticated text. Versatile enough to generate, translate, summarize, or answer questions about text.
- **Convolutional Neural Networks (CNN):** Focused on image recognition or object detection, CNNs use filters to determine the edges of an object in an image, eventually determining the outline or relative dimensions of a subject.
- **Recurrent Neural Networks (RNN):** Intended to work with sequential data, like text, time-series, or spoken language. RNNs incorporate a “short-term memory” to their execution, reinforcing the importance of time. The more recent an item is, the more important it is to the current item.


AI
NLP
Computer Vision
Robotics
ML
Decision Tree
Evolution
Neural Networks
Deep Learning
CNN
RNN
LLM
Bard
GPT-4
LLaMA

Thank You!

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