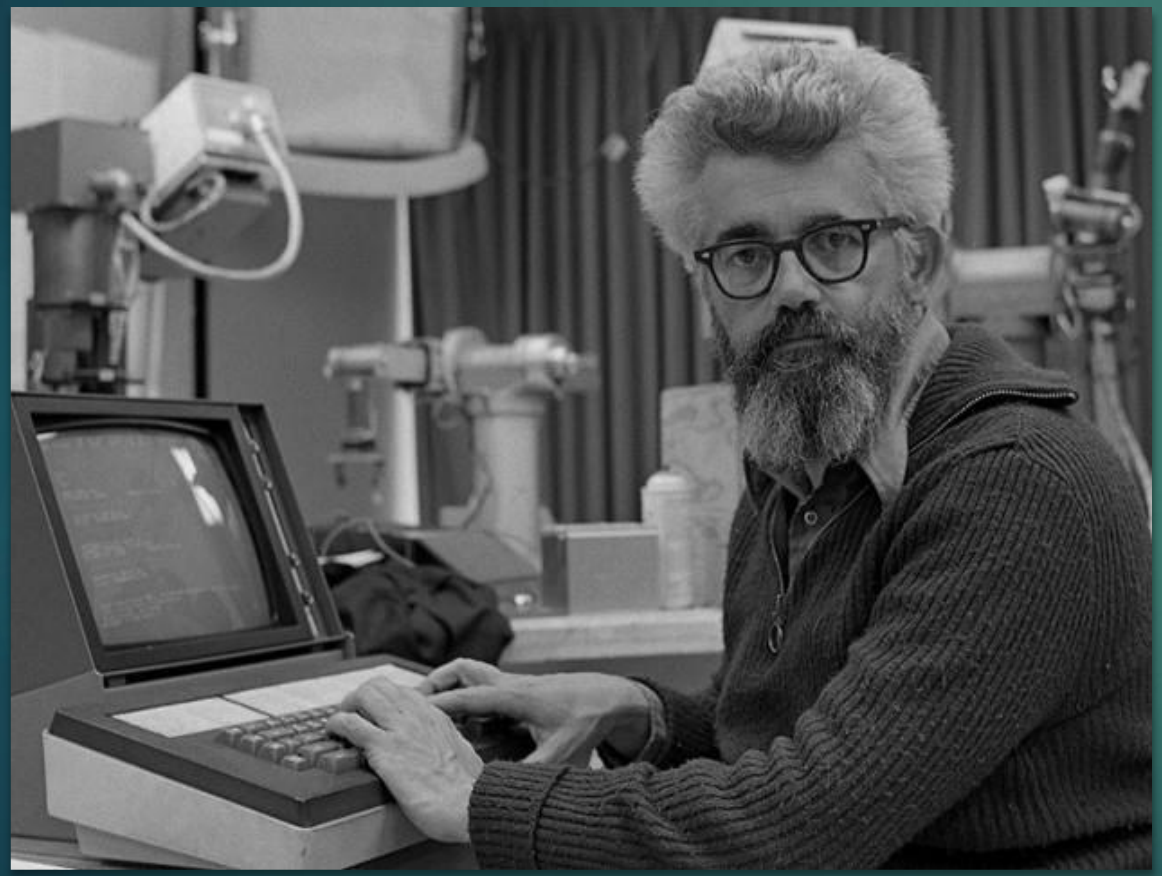
Artificial Intelligence Masterclass

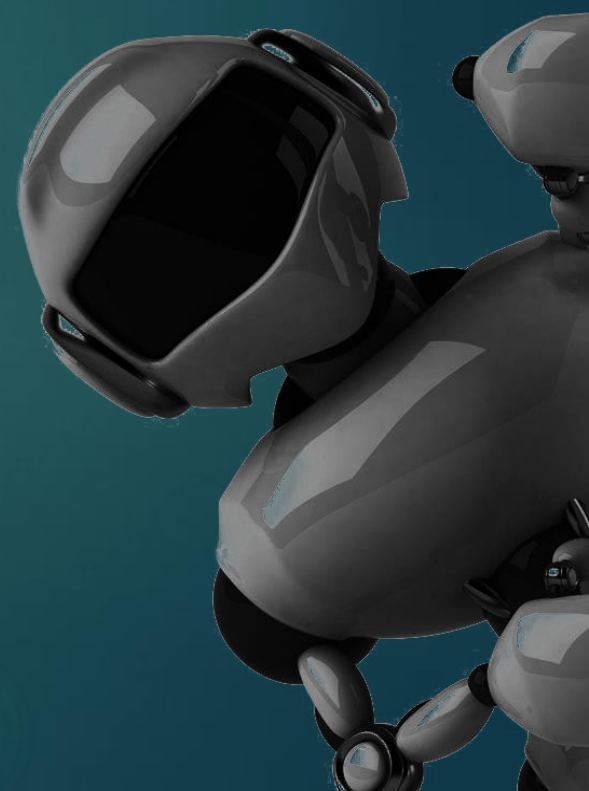
What is Artificial Intelligence



- Artificial Intelligence is an approach to make a computer, a robot, or a product to think how smart human think.
- AI is a study of how human brain think, learn, decide and work, when it tries to solve problems
- And finally this study outputs intelligent software systems
- "The science and engineering of making intelligent machines, especially intelligent computer programs" – John McCarthy

What is Artificial Intelligence

- Artificial intelligence generally false under two broad categories.
  - Narrow Artificial Intelligence
  - Artificial General Intelligence

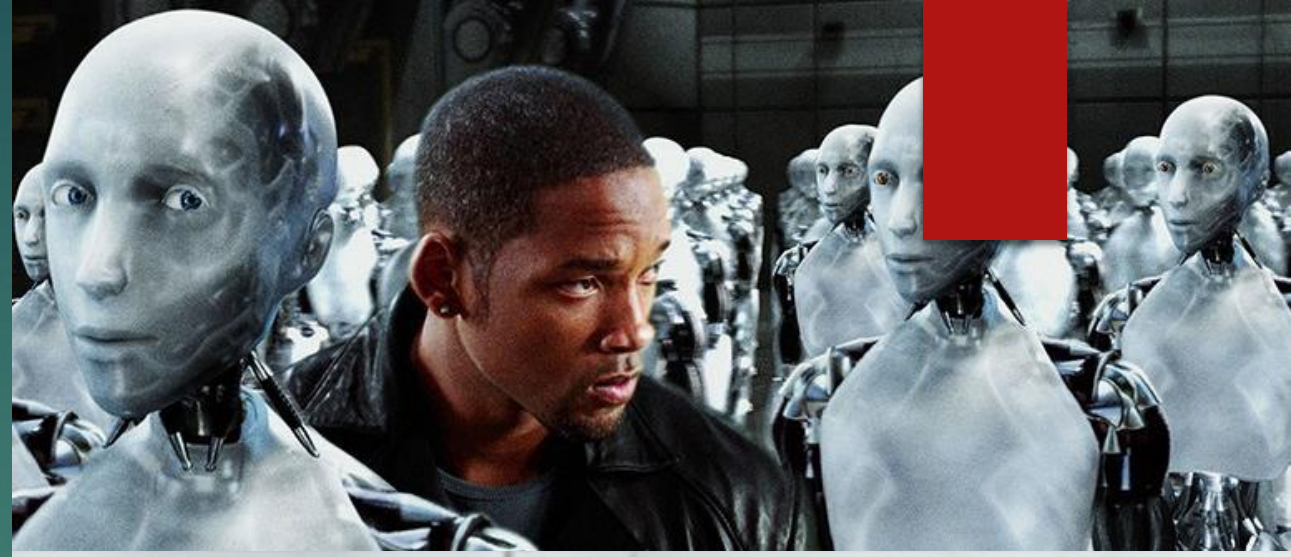


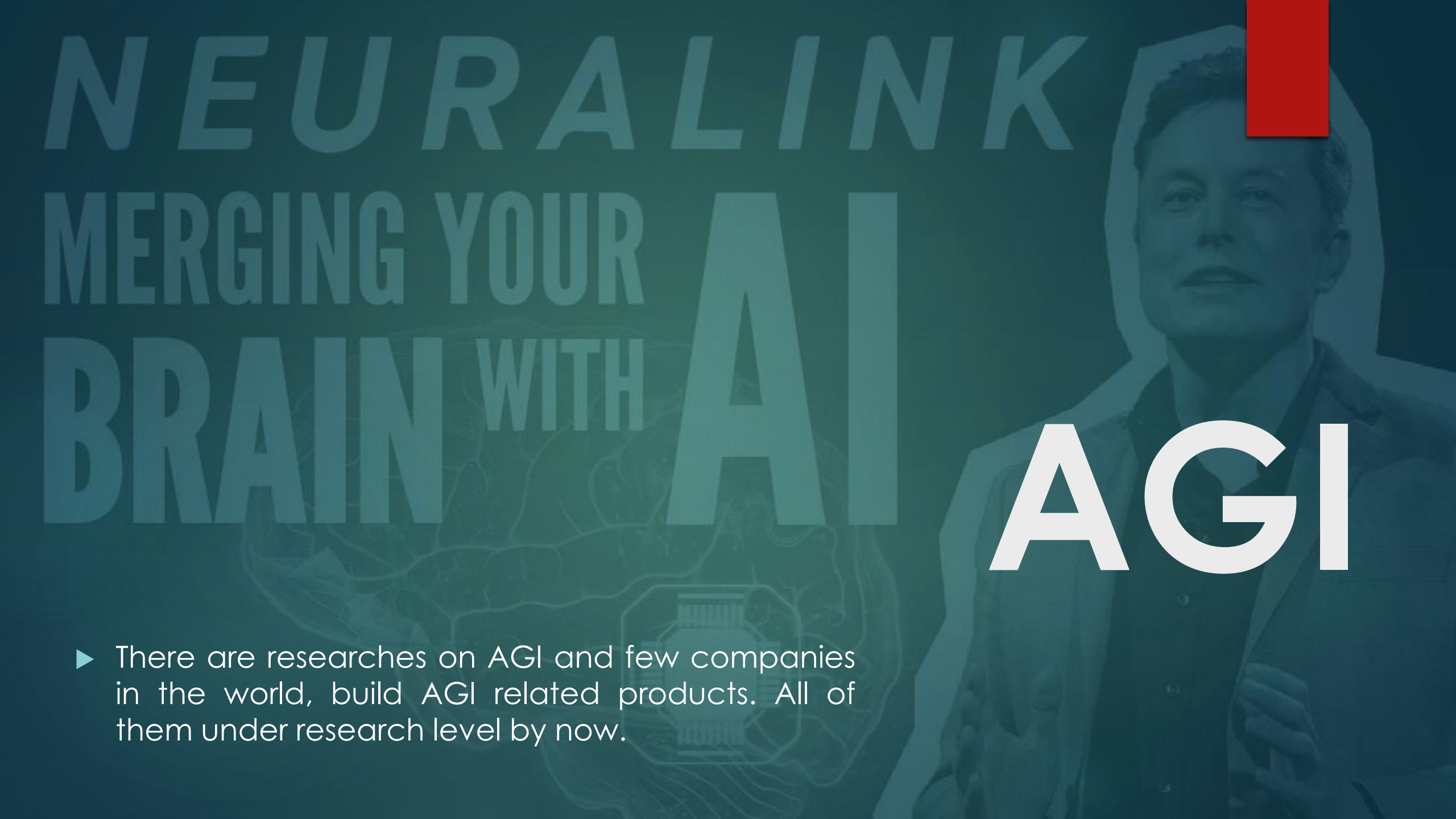
Narrow Artificial Intelligence

- Narrow AI is all around us and is easily the most successful realization of artificial intelligence to date With its focus on performing specific tasks.
- Narrow AI has experienced numerous breakthroughs in the last decade that have had "significant societal benefits and have contributed to the economic vitality of the nation," according to "Preparing for the Future of Artificial Intelligence," a 2016 report released by the Obama Administration Much of Narrow AI is powered by breakthroughs in machine learning and deep learning. A few examples of Narrow AI include,
  - Google search
  - Image recognition software
  - Siri, Alexa and other personal assistants
  - Self driving cars
  - IBM's Watson

Artificial General Intelligence

- The creation of a machine with human level intelligence that can be applied to any task is the Holy Grail for many AI researchers, but the quest for AGI has been fraught with difficulty.
- AGI, sometimes referred to as "Strong AI," is the kind of artificial intelligence we see in the movies, like the robots from Westworld or Data from Star Trek The Next Generation.

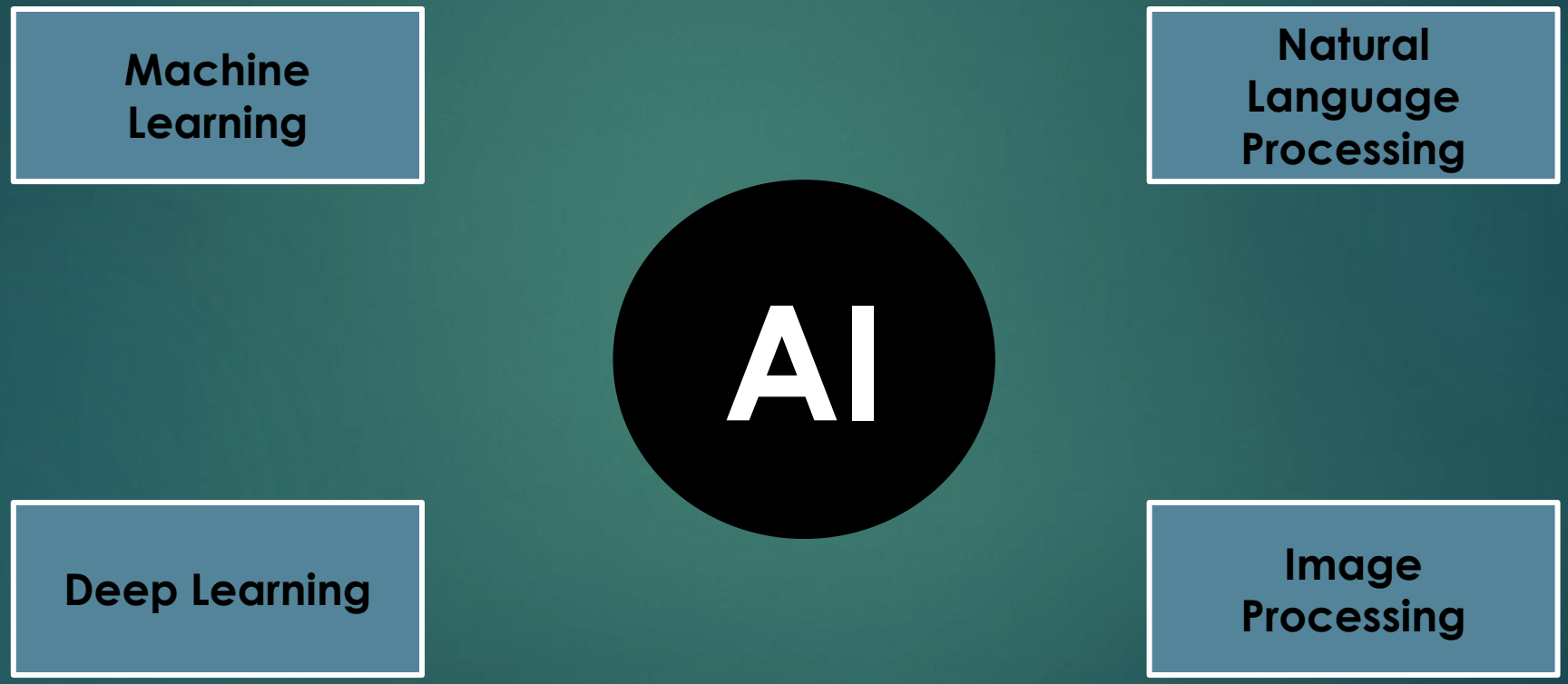




AGI

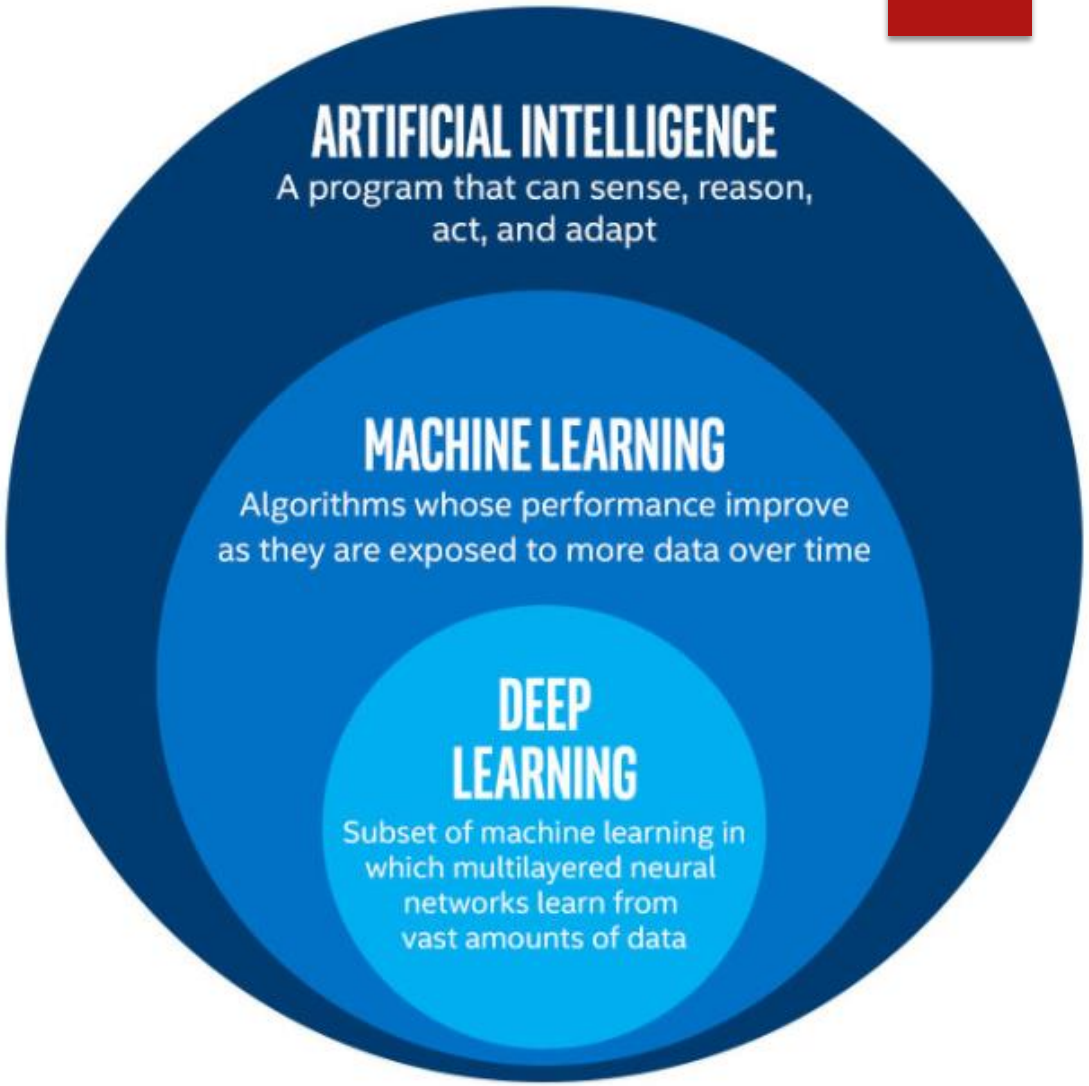
- There are researches on AGI and few companies in the world, build AGI related products. All of them under research level by now.

Parts of Artificial Intelligence

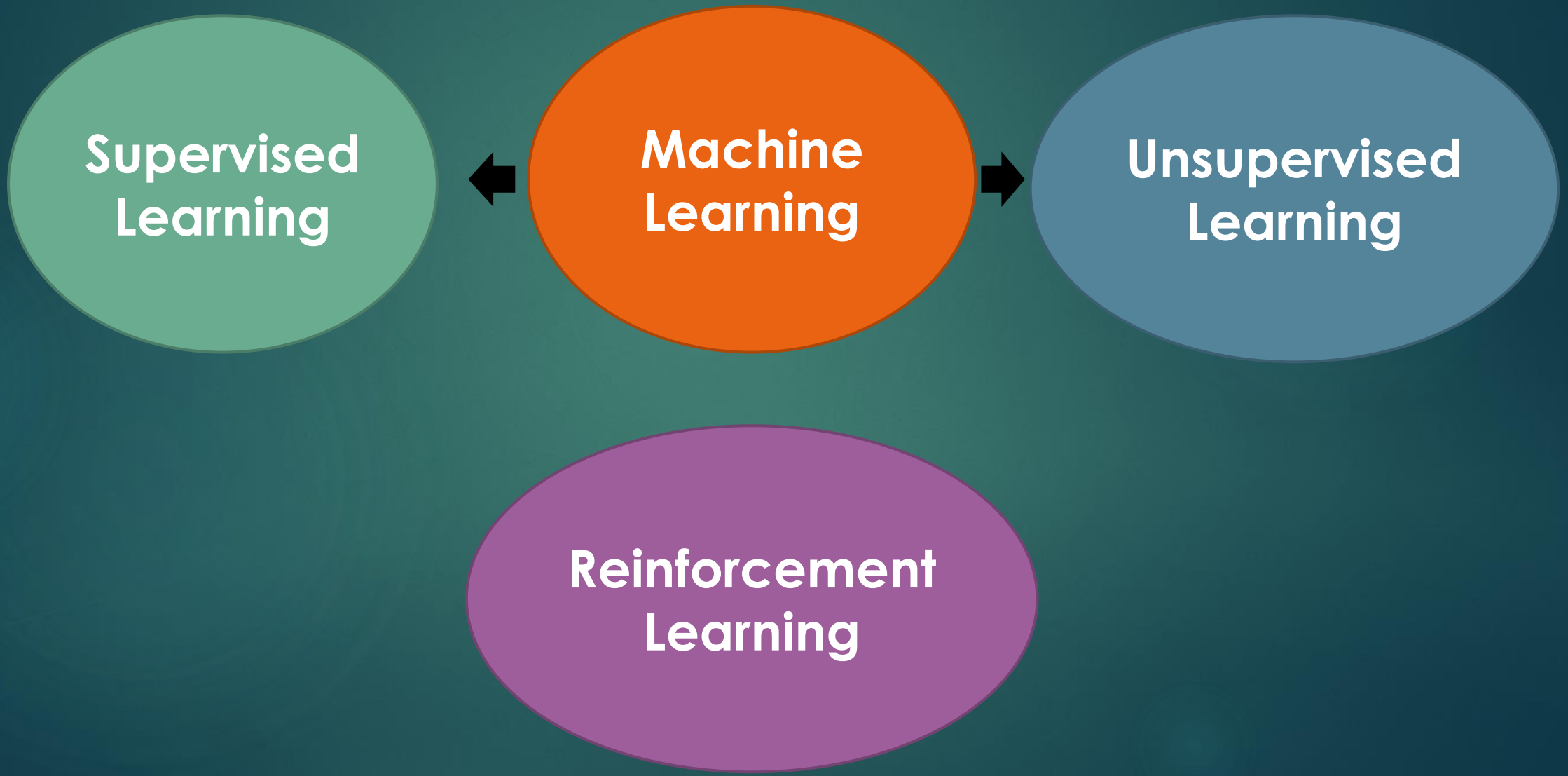


Machine Learning

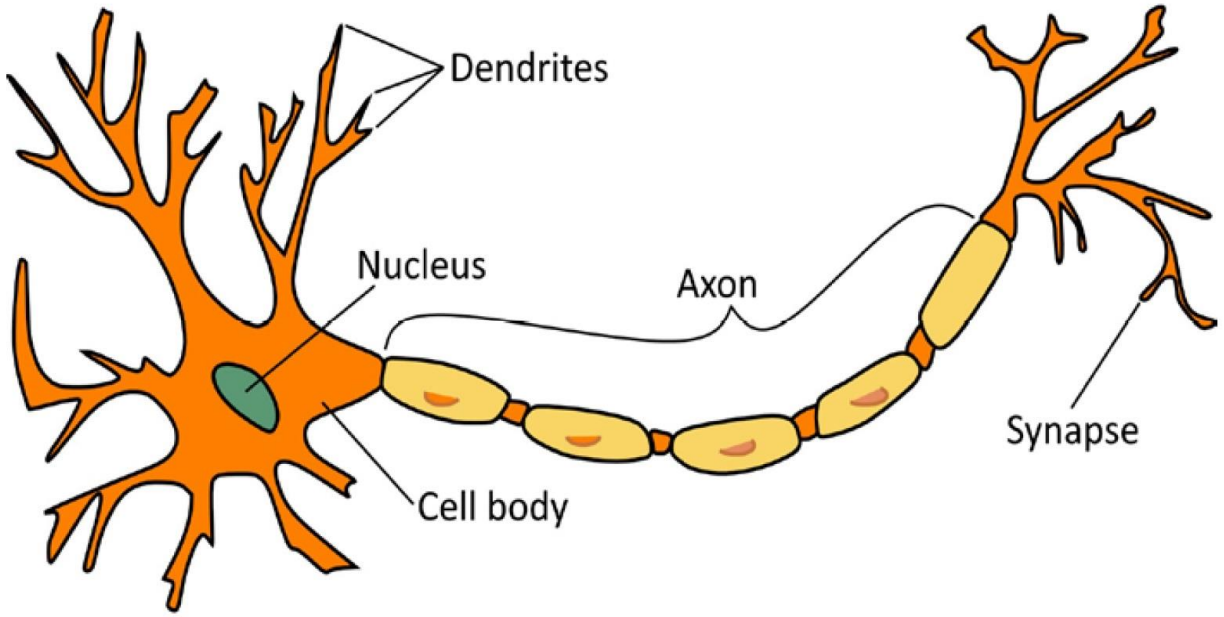
- Machine learning (ML) is a type of artificial intelligence (AI) that allows software applications to become more accurate at predicting outcomes without being explicitly programmed to do so.

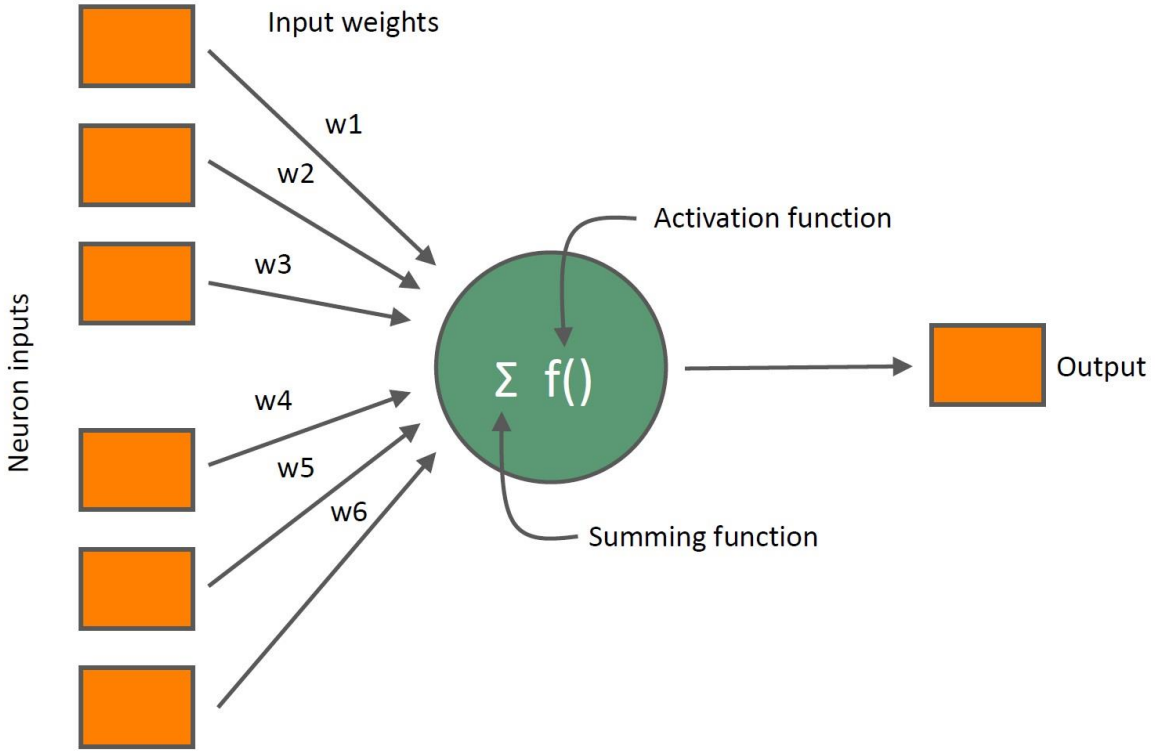


Machine Learning



Deep Learning





- In Deep Learning, an artificial neuron is created which will follow the functions of the biological neuron.

Natural Language Processing

- Natural Language Processing (NLP) is a subfield of artificial intelligence (AI).
- It helps machines process and understand the human language so that they can automatically perform repetitive tasks.

Image Processing

- Image processing is a method to perform operations on an image to extract information from it or enhance it.
- Digital image processing has a broad range of applications such as image restoration, medical imaging, remote sensing, image segmentation, etc.

Career in AI

University of San Diego

Reference

AI Engineer	Build AI models from scratch and help product managers and stakeholders understand results.	$126,536
Data Mining and Analysis	Finding anomalies, patterns, etc. within large data sets to predict outcomes.	$93,044
Machine Learning Engineer	Using data to design, build and manage ML software applications.	$145,296
Data Scientist	Collect, analyze and interpret data sets.	$119,313
Business Intelligence (BI) Developer	Analyze complex data sets to identify business and market trends	$92,283
Big Data Engineer/Architect	Develop systems that allow businesses to communicate and collect data	$142,783
Robotics Engineer	Design, build and test robots or robotic systems.	$100,640
Computer Vision Engineer	Develop and work on projects and systems involving visual data.	$104,258

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Big Data Analyst	Find meaningful patterns in data by looking at the past to help make predictions about the future.	$133,442
User Experience (UX) Designer/Developer	Work with products to help customers understand their function and can use them easily. Understand how people use equipment and how computer scientists can apply that understanding to produce more advanced software.	$77,398
Natural Language Processing Engineer	Explore the connection between human language and computational systems; this includes working on projects like chatbots and virtual assistants.	$111,000
Researcher	Work with computer science and AI research Discover ways to advance AI technology	$53,460
Research Scientist	Expert in applied math, machine learning, deep learning, and computational stats. Expected to have an advanced degree in computer science or an advanced degree in a related field supported by experience.	$123,279
Software Engineer	Develop programs in which AI tools function. The role may also be referred to as a Programmer or Artificial Intelligence Developer.	$88,896