

# Artificial Intelligence and Automation

## Introduction to Artificial Intelligence

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# How does Artificial Intelligence (AI) Work? I

Building an AI system is a careful process of reverse-engineering human traits and capabilities in a machine

- ▶ **Machine Learning:** ML teaches a machine how to make inferences and decisions based on past experience. It identifies patterns and analyses past data to infer the meaning of these data points to reach a possible conclusion without having to involve human experience.
- ▶ **Deep Learning:** Deep Learning is an ML technique. It teaches a machine to process inputs through layers in order to classify, infer and predict the outcome.



## How does Artificial Intelligence (AI) Work? II

- ▶ **Neural Networks:** Neural Networks work on similar principles to Human Neural cells. They are a series of algorithms that captures the relationship between various underlying variables and *processes the data as a human brain does*.
- ▶ **Natural Language Processing:** NLP is the science of reading, understanding, and interpreting a language by a machine. Once a machine understands what the user intends to communicate, it responds accordingly.
- ▶ **Computer Vision:** Computer vision algorithms try to understand an image by breaking down an image and studying different parts of the object. This helps the machine classify and learn from a set of images to make a better output decision based on previous observations.



# How does Artificial Intelligence (AI) Work? III

- ▶ **Cognitive Computing:** Cognitive computing algorithms try to mimic a human brain by analyzing text/speech/images/objects in a manner that a human does and tries to give the desired output. Also, take up applications of artificial intelligence courses for free.



# 3 Types of Artificial Intelligence

## Artificial Narrow Intelligence (ANI)



Stage-1

### Machine Learning

- ▶ Specialises in one area and solves one problem



Siri



Alexa



Cortana

## Artificial General Intelligence (AGI)



Stage-2

### Machine Intelligence

- ▶ Refers to a computer that is as smart as a human across the board

## Artificial Super Intelligence (ASI)



Stage-3

### Machine Consciousness

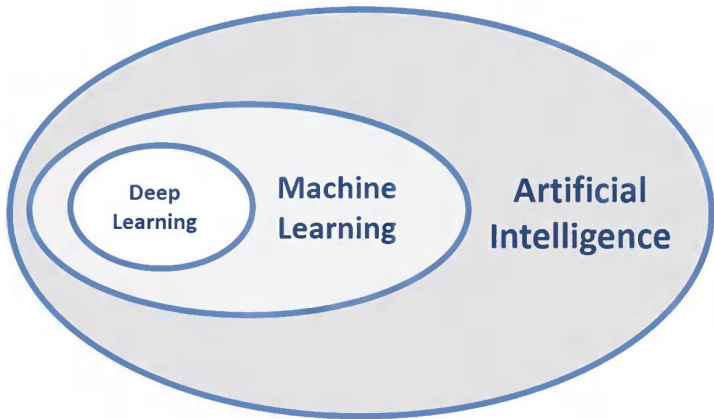
- ▶ An intellect that is much smarter than the best human brains in practically every field





Deep Learning    Natural Language Processing    Machine Learning    Neural Networks    Computer Vision





# ARTIFICIAL INTELLIGENCE VS MACHINE LEARNING VS DEEP LEARNING

## 1 Artificial Intelligence

Development of smart systems and machines that can carry out tasks that typically require human intelligence

## 2 Machine Learning

Creates algorithms that can learn from data and make decisions based on patterns observed  
Require human intervention when decision is incorrect

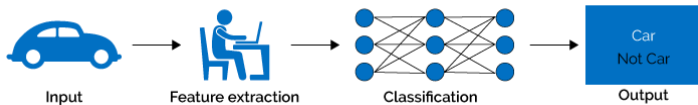
## 3 Deep Learning

Uses an artificial neural network to reach accurate conclusions without human intervention

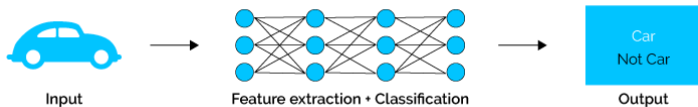




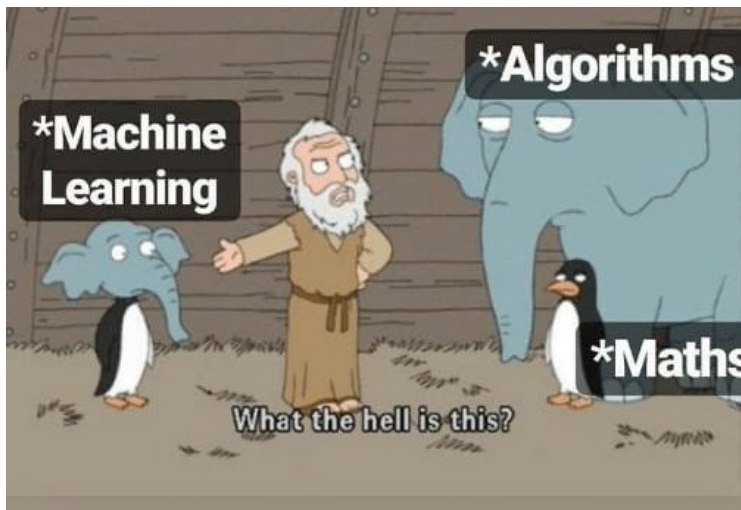
## Machine Learning



## Deep Learning







Yep..we know why you're scared to explore the depths 🤔

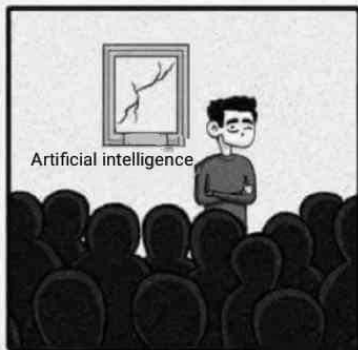
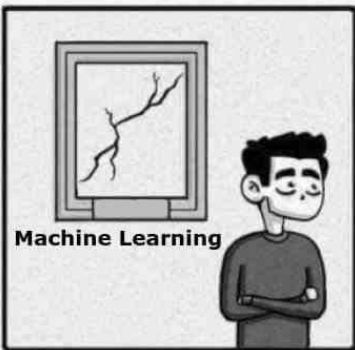
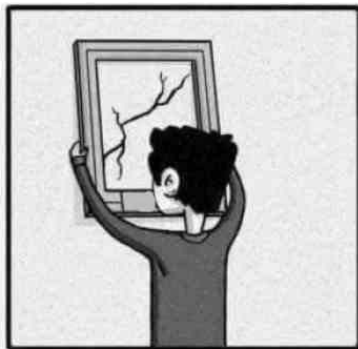
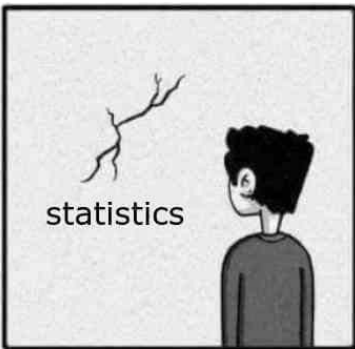
**AI**

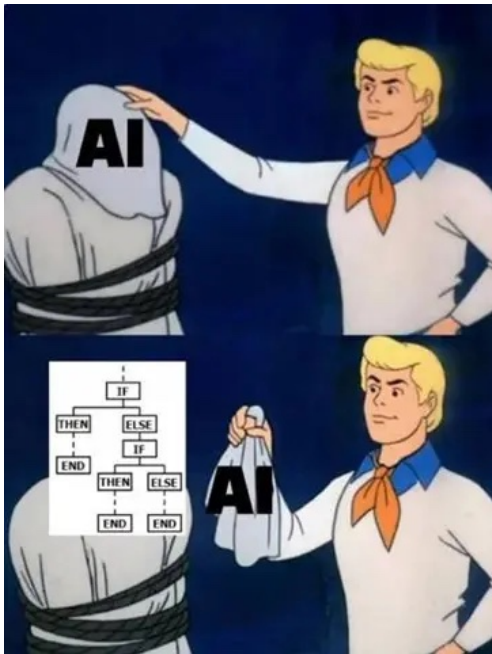
**Machine  
Learning**

**Deep Learning**

**Math & Python  
code that is holding  
it all together 🤔🤔**







-  <https://www.mygreatlearning.com/blog/what-is-artificial-intelligence/>
-  <https://www.formica.ai/blog/which-ai-is-learn-by-its-own>

