

# Artificial Intelligence Lecture 01



Btech CSE 7<sup>th</sup>

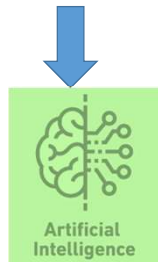


GNDU REGIONAL CAMPUS JALANDHAR



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## Artificial Intelligence

- Artificial **MAN MADE**
- Intelligence **THINKING POWER** (Knowledge + ability to perceive, feel, comprehend, process, communicate, judge, learn)
- **MAN MADE + THINKING POWER**



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<p>What is intelligence?</p>	<p>What is intelligence?</p>
	
<p>Are these Intelligent?</p>	<p>What about these?</p>

Acti

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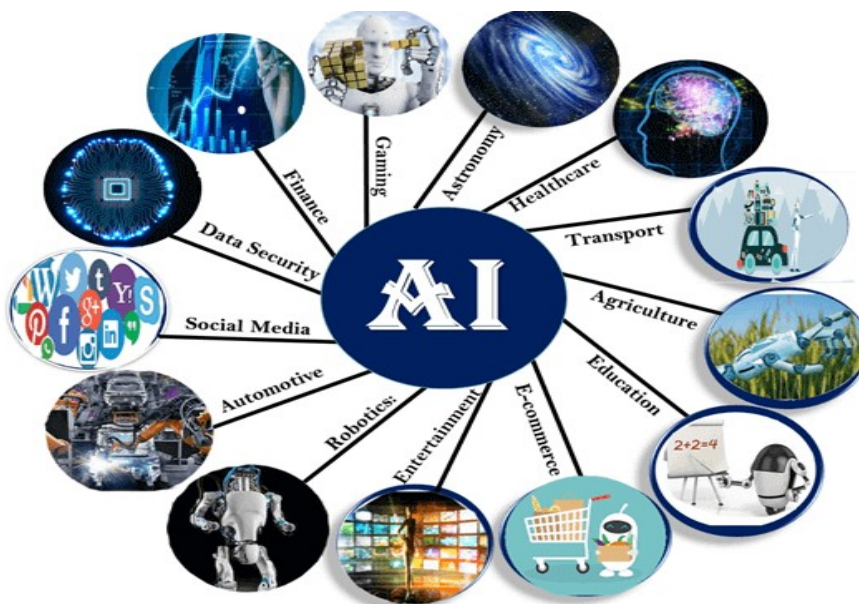
## Definitions

- Artificial Intelligence (AI) is a branch of Computer Science by which we can create intelligent machine which can behave , think and have decision making capabilities like humans
- Artificial Intelligence (AI) is a branch of Science which deals with **helping machines find solutions to complex problems in a more human-like fashion.**
- This generally involves **borrowing characteristics from human intelligence, and applying them as algorithms in a computer friendly way**
- A more or less flexible or efficient approach **can be taken depending on the requirements established, which influences how artificial the intelligent behavior appears.**

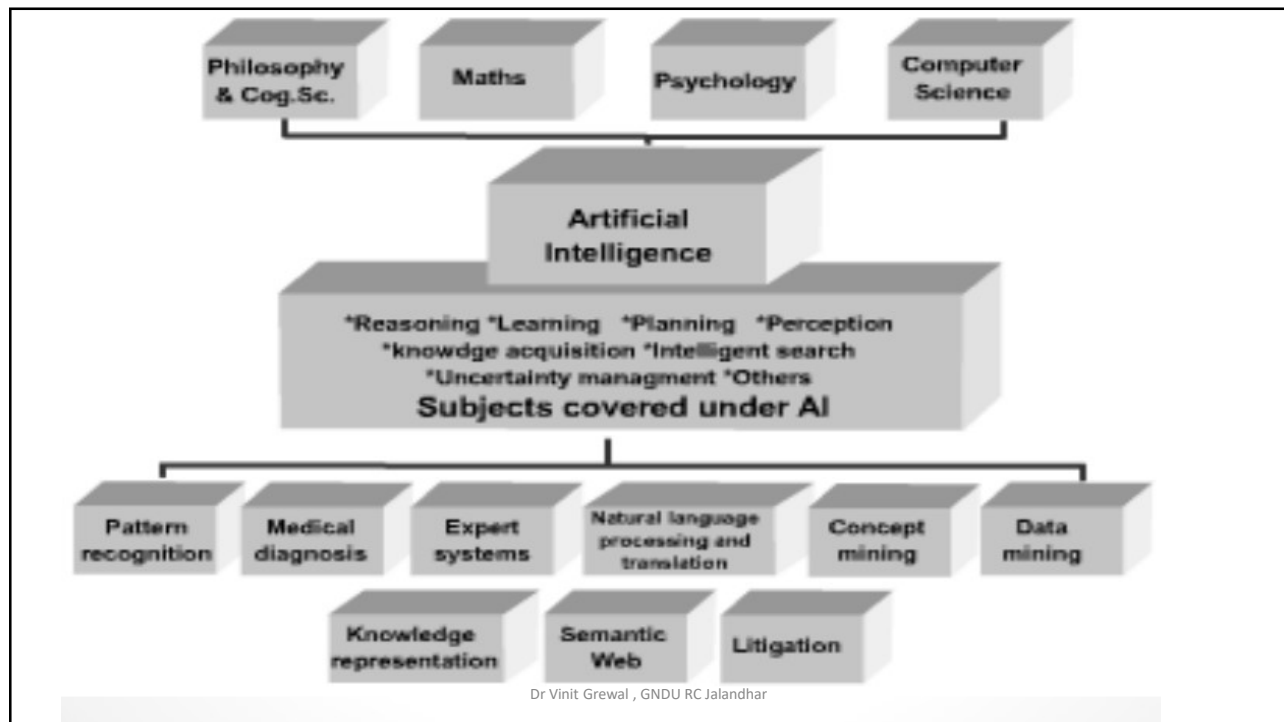
# Artificial Intelligence



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## Some Definitions (I)

The exciting new effort to make  
computers think ...  
*machines with minds,*  
in the full literal sense.

Haugeland, 1985

*(excited but not really useful)*

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## Some Definitions (II)

The study of mental faculties through the use of computational models.

Charniak and McDermott, 1985

A field of study that seeks to explain and emulate intelligent behavior in terms of computational processes.

Schalkoff, 1990

*(Applied psychology & philosophy?)*

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## Some Definitions (III)

The study of how to make computers do things at which, at the moment, people are better.

Rich & Knight, 1991

*(I can almost understand this one).*

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## WHY AI?

- With its help we can create
  - ✓ **Software or device which solves real world problems like traffic; health issues, marketing etc.**
  - ✓ **Personal Assistance like Google assistance , Siri etc**
  - ✓ **Robots to fit into environments where the survival of human is difficult**

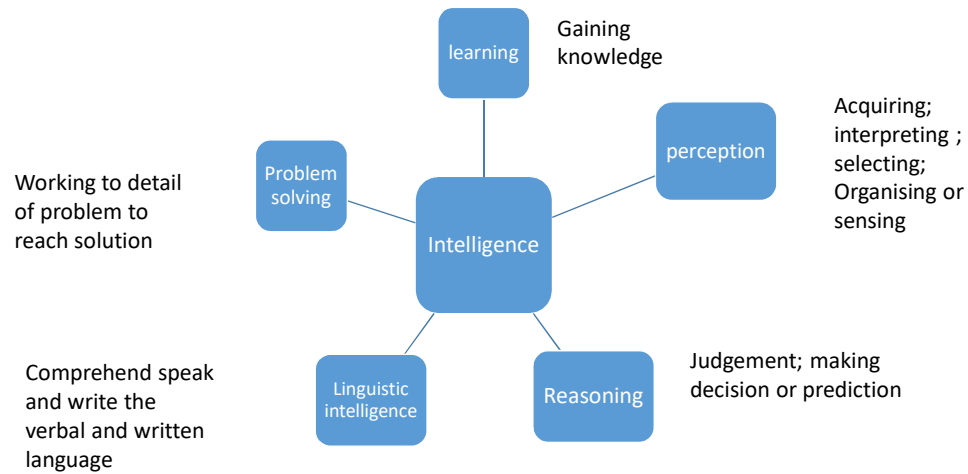
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## Goals of AI

- Replicate human intelligence
- Solve knowledge intensive tasks
- An intelligent connection of perception and action
- Building a machine that can perform tasks such as :
  - **solving theorem; Playing chess, Surgical operations etc..**
- Create a system that exhibits **intelligent behaviour, learn new things by itself, demonstrate, explain and advise to the user.**

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## What is AI composed of:



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## Four AI Definitions by Russell + Norvig

	Like humans	Not necessarily like humans
Think	Systems that think like humans	Systems that think rationally
Act	Systems that act like humans	Systems that act rationally <b>Our focus</b>

↑  
Cognitive Science

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## Classical Test of (Human) Intelligence

- The Turing Test:
  - A human interrogator. Communicates with a hidden subject that is either a computer system or a human.

If the human interrogator cannot reliably decide whether or not the subject is a computer, the computer is said to have passed the Turing test.
- Weak Turing type tests:



See Luis von Ahn, Manuel Blum, Nicholas Hopper, and John Langford.  
CAPTCHA: Using Hard AI Problems for Security. In Eurocrypt.

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