

A decorative graphic on the left side of the slide consisting of overlapping geometric shapes. It includes a blue parallelogram, a light green parallelogram, and a dark grey parallelogram, all with thin black outlines.

Artificial Intelligence

An Introduction

- Ravisankar



What is AI ?



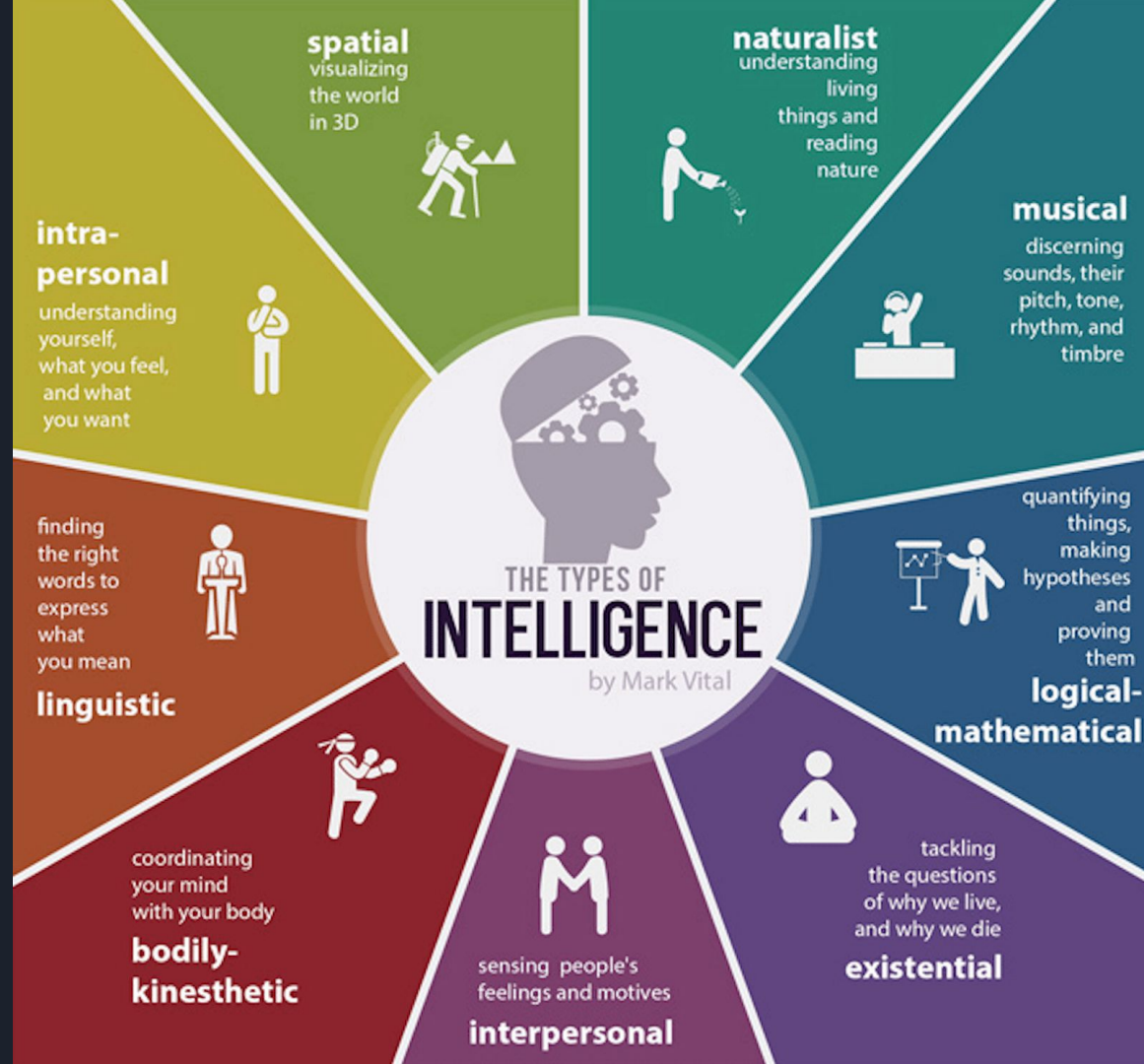
What is AI ?

Artificial + Intelligence



Intelligence

The ability to apply knowledge to manipulate one's environment





Rational Thinking

Rational thinking is a process. It refers to the ability to think with reason. It encompasses the ability to draw sensible conclusions from facts, logic and data.



Are we rational thinkers?



AI in Computer science



A Venn diagram consisting of three concentric circles. The outermost circle is pink and labeled 'Artificial intelligence'. Inside it is a dark blue circle labeled 'Machine Learning'. Inside the dark blue circle is a light blue circle labeled 'Deep Learning'. This illustrates that Deep Learning is a subset of Machine Learning, which is a subset of Artificial Intelligence.

**Artificial
intelligence**

**Machine
Learning**

**Deep
Learning**

**FEEL THE
DIFFERENCE**



Artificial Intelligence



Engineering of
making Intelligent
Machines and Programs

Machine Learning



Ability to learn
without being explicitly
programmed

Deep Learning



Learning based on
Deep Neural
Network

1950's

1960's

1970's

1980's

1990's

2000's

2006's

2010's

2012's

2017's



Algorithms

Search Algorithm

- What is Tree ?
- What is Graph ?
- What is queue ?



Search Algorithms

Problem formulation + Strategy



Strategy

What next ?

How to traverse ?

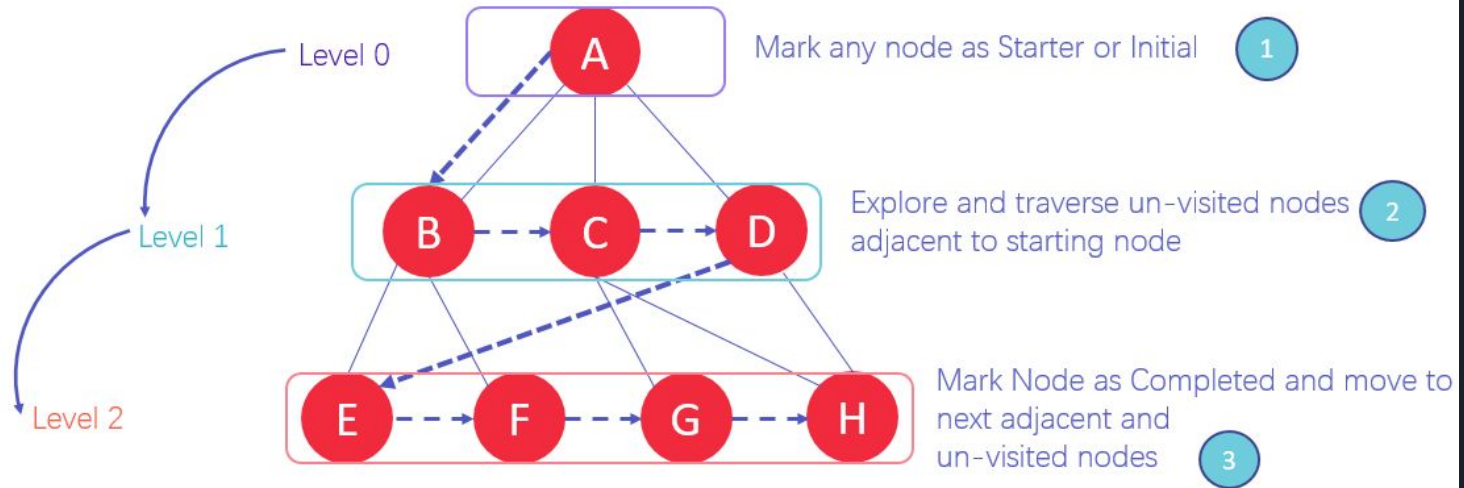


Popular search algorithms

- BFS
- DFS
- A^*
- Greedy Search
- Hill climbing

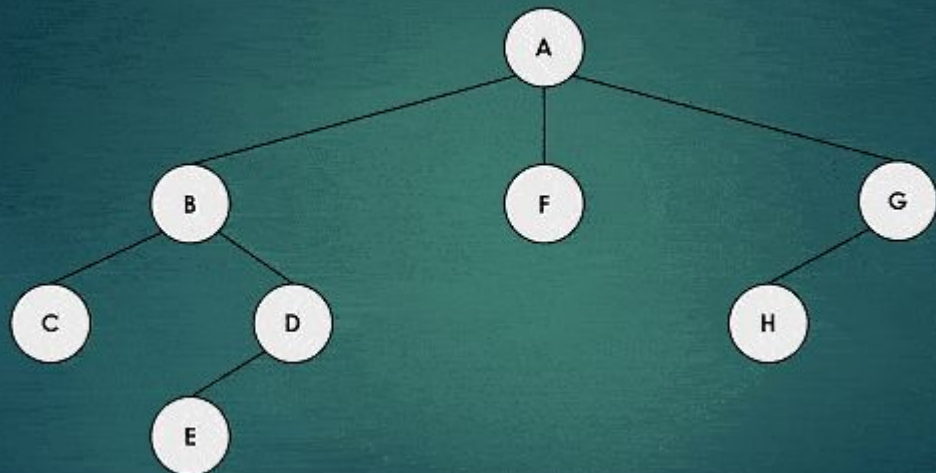
BFS

CONCEPT DIAGRAM



DFS

Recursively check every
unmarked vertices!





BFS vs DFS

