

#Syllabus of A.I

- ✓ 1> Approach to AI (Heuristic Search, Game Playing)
- ✓ 2> Knowledge Representation (Approaches, predicate logic)
- 3> Planning (Overview, Hierarchical, goal stack)
- 4> NLP (Syntactic, Semantic)
- ✓ 5> Multiagent System (types, properties)
- ✓ 6> Fuzzy Sets (Crisp, fuzzy, set, ~~cut~~, operations)
- ✓ 7> ANN and Genetic Algo (single, multilayer feed forward, Recurrent, Machine learning).

* What is Artificial Intelligence?

"Can machines Think"?

→ Netflix recommends movies on our behaviour.

→ Reasoning - think logical

→ Learning - learn through experiences in the past.

→ Problem solving -

→ Perception - decision based on the senses.

* State Space Search

* How to represent the problem precisely?

* We can analyse the problem after this.

→ We used state space search for precisely representation.

* 8 puzzle problem:-

$S: \{S, A, \text{Action}(s), \text{Result}(s, a), \text{cost}(s, a)\}$

$S = \text{start, Goal}$

Legal moves
VS
illegal moves.
→ up, down, left,
Right.

2	3	4
5		1
8	7	6

Start state

1	2	3
8		4
7	6	5

Goal state.

* Two ways of searching :-

- (i) uninformed search (Blind search)
- (ii) Informed search (Heuristic search)

uninformed searching

- ① Search without information
- ② NO knowledge
- ③ Time consuming
- ④ more complexity
- ⑤ used DFS, BFS, etc.

Informed searching

- ① Search with information
- ② use knowledge to find steps to solution.
- ③ Quick solution.
- ④ less complexity. (time, space)
- ⑤ use A*, Heuristic DFS, Best first search.

* Information is also called heuristic.