Summary of AI Course

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1. Importance of AI

2. Key Concepts in AI

3. Problem Solving Techniques

4. Constraints in AI

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01

Importance of AI

Importance of AI

1. Importance of AI
2. Application of AI
3. Goals of AI
4. Approaches of AI

02

Key Concepts in AI

Key Concepts in AI

Turning Test

- Turning test

Agent

- Agent

Types of Environment

- Types of Environment

03

Problem Solving Techniques

Problem Solving Techniques

1 Solving Problems by Searching

- Solving problems by searching

2 Well Defined Problem

- Well defined problem

3 Specific Problems

- 8 puzzle problem
- N-Queen problem

4 Uniformed Search Techniques

- Uniformed search
  - BFS
  - DFS
  - Iterative Deepening Search
  - Bidirectional search
  - Depth limited search

5 Informed Search Techniques

- Informed search
  - Heuristic Search
  - Best first search
  - A*
  - AO* Algorithm
  - Hill climbing
  - Beam search

6 Game Playing

- Game playing
  - Min-max algorithm
  - Alpha beta algorithm

04

Constraints in AI

Constraints in AI

Varieties of Constraints

- Varieties of Constraints

Constraint Satisfaction Problem

- Constraint Satisfaction problem
- Job Scheduling problem
- Cryptarithmetic puzzle & problem

Constraint Propagation Techniques

- Constrain propagation
- Local Consistency
- Node constraining
- Arc consistency
- Path consistency
- K consistency
- Global consistency
- Bound Propagation

Backtracking Techniques

- Backtracking
- MRV & Degree heuristic
- Forward

05

Knowledge Representation and Reasoning

Knowledge Representation and Reasoning

1 Propositional Logic

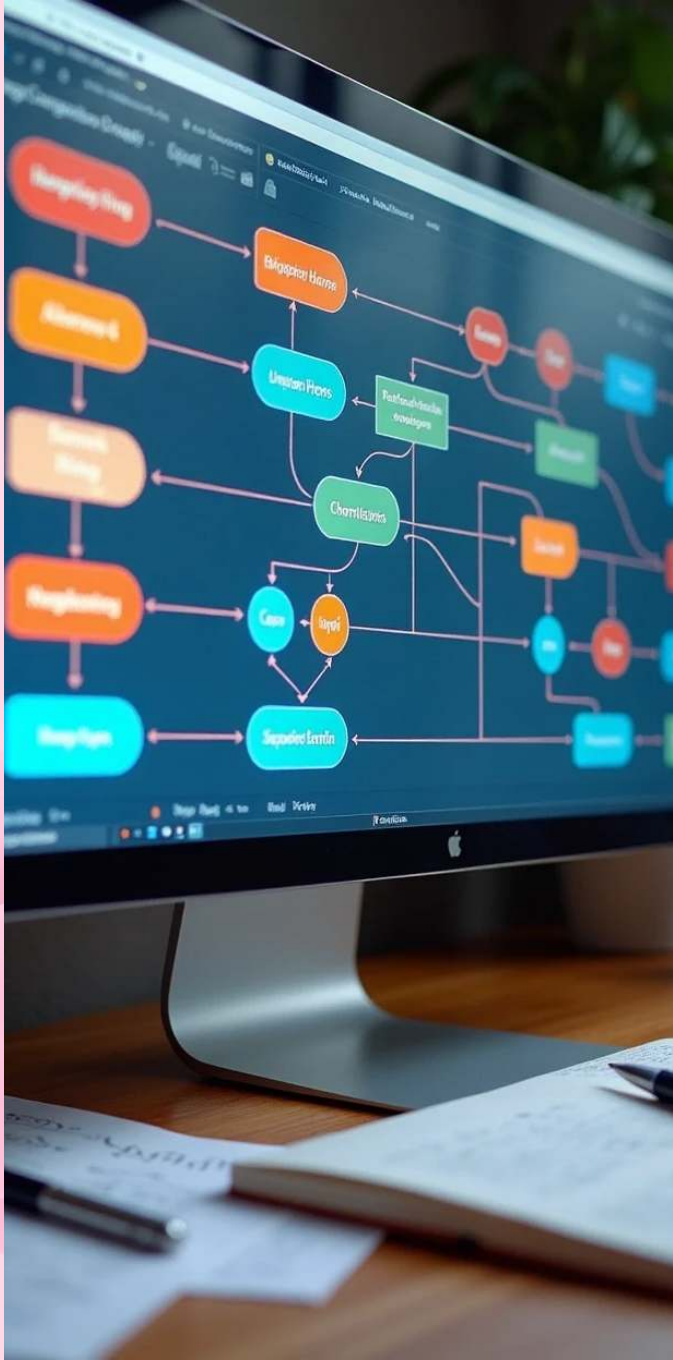
- Propositional Logic
- Converse of Conditional Statement
- Some law
- Normal Forma (DNF & CNF)

2 Predicate Logic

- Introduction of predicate Logic
- Quantifier

3 Algorithms in AI

- Branch & Bound Algorithm
- 0/1 knapsack (using branch & bound algo.)



06

Learning in AI

Learning in AI

Types of Learning

- Learning
  - Supervised learning
  - Reinforcement learning
  - Unsupervised learning

Uncertainty in AI

- Uncertainty
- Bayesian Network
- Livelihood Weight Sampling

07

Natural Language Processing

Natural Language Processing

NLP

08

Algorithms and Robotics

Algorithms and Robotics

Page Rank Algorithm

- Page Rank Algorithm

Robots

- Robot

Implementation

- Implementation of algorithms by Python
- Implementation of AI games as lab task

Thank You