

Unit 3 - Adversarial Search and Games

May 2023

1. List All problem solving strategies. What is backtracking, explain with n queen problem, with Branch and bound or Backtracking. [8]

Answer: https://youtu.be/jeB_9sYiMjE
https://youtu.be/_0HUREUz-0o

2. Explain Monte Carlo Tree Search with all steps and Demonstrate with one Example. [9]

Answer: https://youtu.be/gdWnf_8xCpk

3. Explain limitations of game search algorithm, Differentiate between stochastic and partial games [8]

Answer: <https://youtu.be/9WpF9fd-4gU>
<https://youtu.be/9a8xtO0AMWg>

ii) Explain How use of alpha and beta cut-offs will improve performance of minimax algorithm? [9]

Minimax Search Algorithm : <https://youtu.be/W5WmgM1LJAQ>

alpha and beta cut-offs : <https://youtu.be/tkPdNy6WQNY>

Alpha beta Examples : <https://youtu.be/meX4qHhVv00>

4. Define is Constraint satisfaction problem, State the types of consistencies Solve the following Crypt Arithmetic Problem. [8]

SEND

+ MORE

MONEY

Answer: <https://youtu.be/BppluACX4eg>
<https://youtu.be/jdiV78Nf7g4>

December 2023

1. Explain Minimax and Alpha-Beta pruning for adversarial search with example. 9 Marks

Answer:

Minimax Search Algorithm : <https://youtu.be/W5WmgM1LJAQ>

alpha and beta cut-offs : <https://youtu.be/tkPdNy6WQNY>

Alpha beta Examples : <https://youtu.be/meX4qHhVv00>

2. Define and explain Constraints satisfaction problem. 9 Marks

Answer: <https://youtu.be/BppluACX4eg>

3. How AI technique is used to solve tic-tac-toe problem. 9 Marks

4. Explain with example graph coloring problem. 9 Marks

Answer: <https://youtu.be/lg3aYw78qG8>

May 2022

1. Explain Alpha - Beta Tree search and cutoff procedure in detail with example

Answer: alpha and beta cut-offs : <https://youtu.be/tkPdNy6WQNY>

Alpha beta Examples : <https://youtu.be/meX4qHhVv00>

2. What are the issues that need to be addressed for solving CSP efficiently? Explain the solutions to them [9]

Answer: <https://youtu.be/BppluACX4eg>

3. Explain in detail the concepts of back tracking and constraint propagation and solve the N-queen problem using these algorithms

Answer: <https://youtu.be/a5o0KyIdpV>

4. Write a short note on Monte Carlo Tree search and list its limitations. [5 Mark]
Answer: https://youtu.be/gdWnf_8xCpk
5. Apply constraint satisfaction method to solve following Problem
SEND + MORE = MONEY. (TWO + TWO = FOUR, CROSS+ ROADS= DANGER)
Answer: <https://youtu.be/jdiV78Nf7g4>

May 2024

1. List All problem solving strategies. What is backtracking, explain with n queen problem [9]
Answers: https://youtu.be/jeB_9sYiMjE
https://youtu.be/_0HUREUz-0o
2. Write Minimax Search Algorithm for two players. How use of alpha and beta cut-offs will improve performance? [9]

Answer:

Minimax Search Algorithm : <https://youtu.be/W5WmgM1LJAQ>

alpha and beta cut-offs : <https://youtu.be/tkPdNy6WQNY>

Alpha beta Examples : <https://youtu.be/meX4qHhVv00>

3. Define Game theory, Differentiate between stochastic and partial games with examples.

Answers:

<https://youtu.be/3INLGeK1s-4>

<https://youtu.be/9a8xtO0AMWg>

4. Define is Constraint satisfaction problem, State the types of consistencies
Solve the following Crypt Arithmetic Problem. [8]

B A S E

+ B A L L

G A M E S

Answers:

Constraint satisfaction problem: <https://youtu.be/BppluACX4eg>

State the types of consistencies : <https://youtu.be/8bW5Scs9GQg>

Crypt Arithmetic Problem: <https://youtu.be/m02YxrGtQQ8>