

Quiz #9. Games and multi-agent systems

What is a zero-sum game?

What is a solution of a game?

What is the difference between deterministic and stochastic games?

Which nodes in the game tree are evaluated by the utility function?

Define a minimax value for both deterministic and stochastic games.

Do minimax and alpha-beta algorithms always return the same solution?

Does the minimax algorithm need to reach a terminal state to find a solution?

Does the alpha-beta pruning algorithm need to reach a terminal state to find a solution?

Describe some techniques to get an evaluation function.

What is a difference between pure and mixed strategies?

Describe prisoner's dilemma. Why is it called dilemma?

What is a dominant strategy?

What is a Nash equilibrium? What is a Pareto optimum?

Describe maximin technique.

What is a repeated game? Is there a difference between knowing and not knowing how many times the game will be repeated?

What is a good strategy if we do not know the number of repetitions?

What is auction? What is the main difference between English and Dutch auctions? What is a rational strategy for the English auction?

What are the major problems and advantages of English auction? Why English auction discourages competition?

Explain sealed-bid and Vickrey auctions. What is the major difference between them? What are the rational strategies for these auctions?

What is tragedy of common? Give some examples. How is this problem solved?

What is the difference between mechanism design and theory of games?