

ARTIFICIAL INTELLIGENCE

Chapter # 1

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What is Artificial Intelligence?

Some of the Task Domains of Artificial Intelligence

Mundane Tasks

- Perception
 - Vision
 - Speech
- Natural language
 - Understanding
 - Generation
 - Translation
- Commonsense reasoning
- Robot control

Some of the Task Domains of Artificial Intelligence

Formal Tasks

- Games
 - Chess
 - Backgammon
 - Checkers -Go
- Mathematics
 - Geometry
 - Logic
 - Integral calculus
 - Proving properties of programs

Some of the Task Domains of Artificial Intelligence

Expert Tasks

- Engineering
 - Design
 - Fault finding
 - Manufacturing planning
- Scientific analysis
- Medical diagnosis
- Financial analysis

Tic Tac Toe 1

Board

1	2	3
4	5	6
7	8	9

Move table

✱ A vector of 19,683 elements

Tic Tac Toe 2

Board

8	3	4
1	5	9
6	7	2

Question Answering Example

Mary went shopping for a new coat. She found a red one she really liked. When she got it home, she discovered that it went perfectly with her favorite dress.

✱ Q1 : What did Mary go shopping for?

✱ Q1 : What did Mary find that she liked?

✱ Q1 : Did Mary buy anything?

A Structure Representation of a Sentence

Event 2

<i>instance :</i>	<i>Finding</i>
<i>tense:</i>	<i>Past</i>
<i>agent :</i>	<i>Mary</i>
<i>object:</i>	<i>Thing1</i>

Thing1

<i>instance:</i>	<i>Coat</i>
<i>color:</i>	<i>Red</i>

Event2

<i>instance:</i>	<i>Liking</i>
<i>tense :</i>	<i>Past</i>
<i>modifier:</i>	<i>Much</i>
<i>object:</i>	<i>Thing1</i>

A Shopping Script

Shopping Script:

roles: C (customer), S (salesperson)

props: M (merchandise), D (dollars)

location: L (a store)

