



Al-Rasheed University College

Dept. of Computer Tech. Engineering

Third Class

Artificial intelligence and expert systems

AIES390

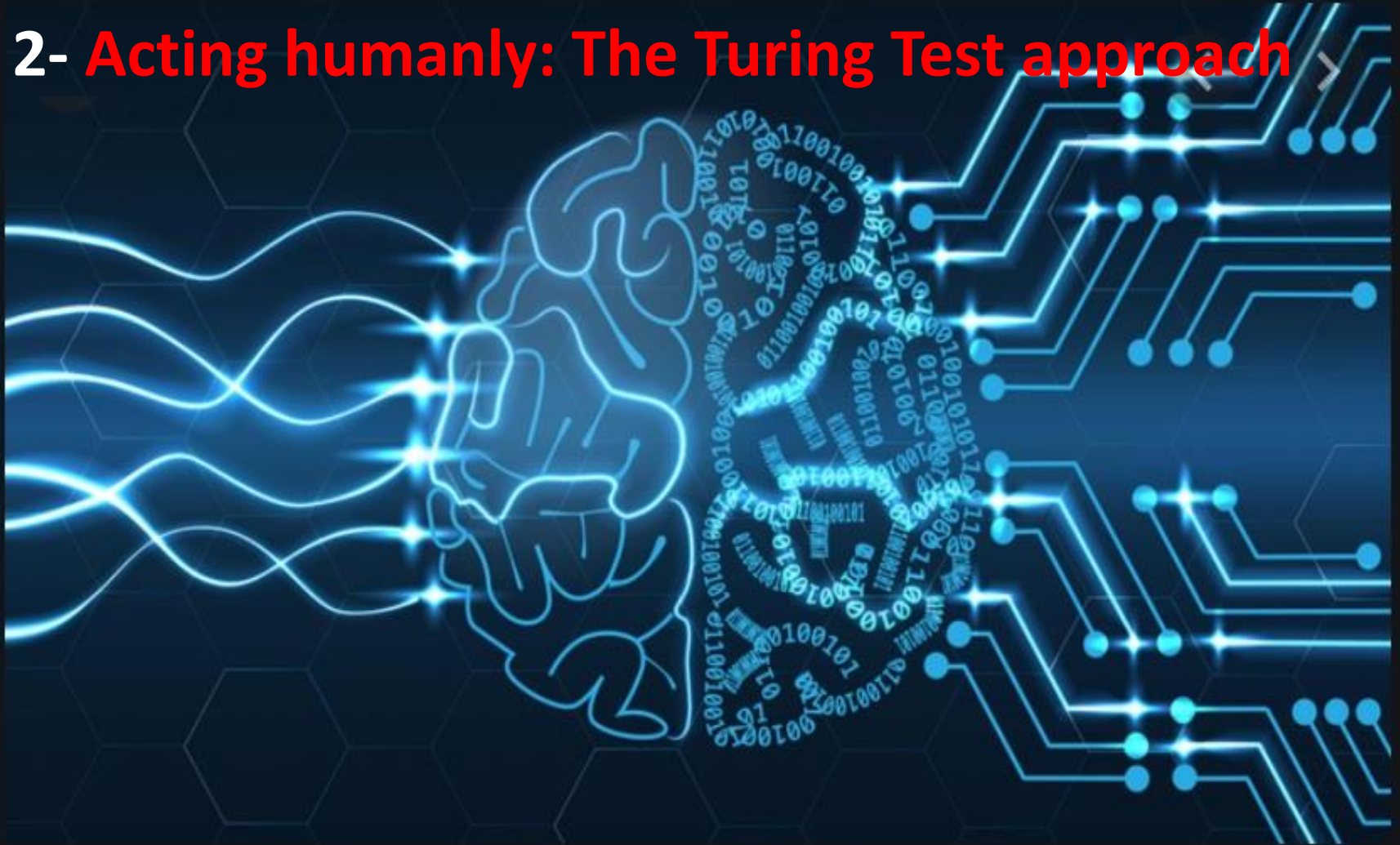
Assist. Lecturer Mohemmed Fadhil Abbas

Third Lecture

3rd

1- AI Definition

2- Acting humanly: The Turing Test approach



1- AI Definition

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Thinking Humanly

“The exciting new effort to make computers think ... *machines with minds*, in the full and literal sense.” (Haugeland, 1985)

“[The automation of] activities that we associate with human thinking, activities such as decision-making, problem solving, learning ...” (Bellman, 1978)

Thinking Rationally

“The study of mental faculties through the use of computational models.” (Charniak and McDermott, 1985)

“The study of the computations that make it possible to perceive, reason, and act.” (Winston, 1992)

Acting Humanly

“The art of creating machines that perform functions that require intelligence when performed by people.” (Kurzweil, 1990)

“The study of how to make computers do things at which, at the moment, people are better.” (Rich and Knight, 1991)

Acting Rationally

“Computational Intelligence is the study of the design of intelligent agents.” (Poole *et al.*, 1998)

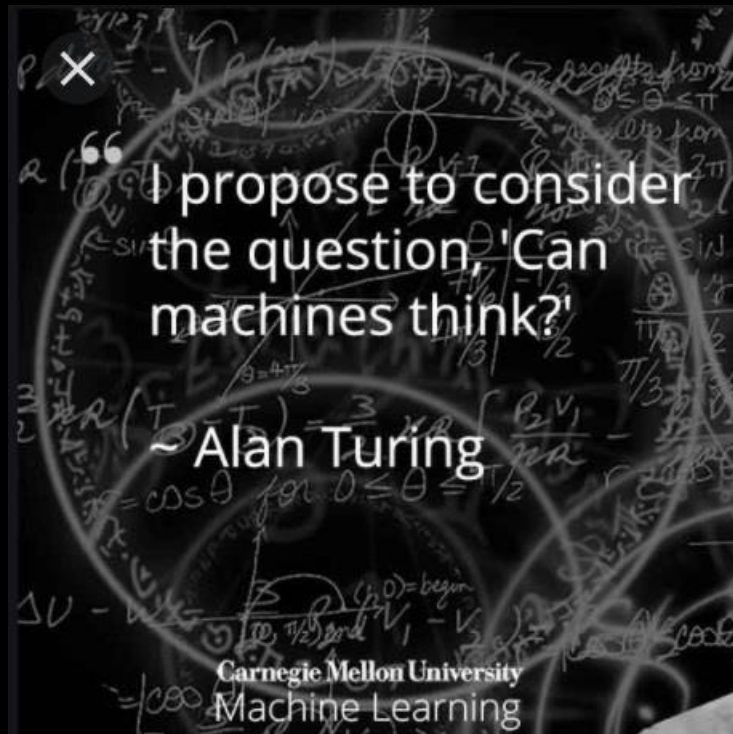
“AI ... is concerned with intelligent behavior in artifacts.” (Nilsson, 1998)

Some definitions of artificial intelligence, organized into four categories.

2- Acting humanly: The Turing Test approach

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The **Turing Test**, proposed by **Alan Turing**, TURING TEST (1950), was designed to provide a satisfactory operational definition of intelligence. A computer passes the test if a human interrogator, after posing some written questions, cannot tell whether the written responses come from a person or from a computer.



The Turing Test

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- **natural language processing** to enable it to communicate successfully in English.
- **knowledge representation** to store what it knows or hears.
- **automated reasoning** to use the stored information to answer questions and to draw REASONING new conclusions.
- **machine learning** to adapt to new circumstances and to detect and extrapolate patterns.

- Turing's test deliberately avoided direct physical interaction between the interrogator and the computer, because physical simulation of a person is unnecessary for intelligence. However, the so-called **total Turing Test** includes a video signal so that the interrogator can test the subject's perceptual abilities, as well as the opportunity for the interrogator to pass physical objects .
- To pass the **total Turing Test**, the computer will need:
 - computer vision **to perceive objects,**
 - robotics **to manipulate objects and move about.**

