Tutorial 2

1. Explain the Turing Test.

TEH CHIN GUAN

A Turing Test is a test that is conducted among the human interrogator, human participants and a computer. It is named after an English computer scientist, Alan Turing. The purpose of this test is to study the behaviour of the computer and determine whether it has the ability to think like a human or not. According to Alan Turing, the computer is said to be intelligent if it passes the test. In order for the computer to pass the test , it must be able to deceive the human interrogator successfully or make itself indistinguishable from the human.

For example, the **human interrogator** will first have a conversation with a male and a female participant. Both the human participants must convince the human interrogator that they are female. The same idea applies to a **human participant and a computer**. Both the human participant and computer must be able to make the human **interrogator think that they are human**. If the **interrogator is not able to determine which is which, then the computer is said to pass the test and is intelligent.**
✔

2. **Criticize** Turing's criteria for judging a computer's intelligence.

TAN KAI YUAN

Software could pass the Turing test simply by manipulating symbols of which they had no understanding. Without understanding, they could not be described as "thinking" in the same sense people are.
The first program with some claim to success was called ELIZA with only a fairly short and simple script, it managed to mislead many people by mimicking a psychologist, encouraging them to talk more and reflecting their own questions back at them.
Another early script PARRY took the opposite approach by imitating a paranoid schizophrenic who kept steering the conversation back to his own preprogrammed obsessions.
Their success in fooling people highlighted one weakness of the test

Ref: https://en.wikipedia.org/wiki/Turing_test#ELIZA_and_PARRY

5 minutes test
Judge
30% chance to deceive the human interrogator

3. Suggest how could this test be used (or modified) to assess other kinds of artificial intelligence besides a chatbot. Provide an example to elaborate your answer.

ONG T'NSAM

Turing test can be used to prevent automated systems from being used to abuse the site. If any software is able to read the distorted image accurately, so any system able to do so is likely to be a human.

Example : Captcha
✔

Can you think of another example based on your creativity?

4. The Loebner Prize is an annual competition in artificial intelligence that awards those computer programs considered by the judges to be the most human-like, using format of a standard Turing Test. The conversation scope between the programs and the judges has been unrestricted since 1995, and the duration of the conversation has been increased from 5 minutes to 25 minutes since 2010 (http://www.loebner.net/).

(i) Discuss **TWO (2)** reasons why Turing Test is considered **not effective enough** in assessing machine intelligence.

LIM YIH FENG

Some human behaviour is unintelligent

The Turing test requires that the machine be able to execute all human behaviours. It tests for behaviours that may not be considered intelligent at all, such as the susceptibility to insults,the temptation to lie or, simply, a high frequency of typing mistakes. If a machine cannot imitate these unintelligent behaviours in detail it fails the test.

LIM MING JUN

Some intelligent behaviour is inhuman

The Turing test does not test for highly intelligent behaviours, such as the ability to solve difficult problems or come up with original insights. In fact, it specifically requires deception on the part of the machine. If the machine is more intelligent than a human being it must deliberately avoid appearing too intelligent. If it were to solve a computational problem that is practically impossible for a human to solve, then the interrogator would know the program is not human, and the machine would fail the test. Since, it cannot measure intelligence that is beyond the ability of humans, the test cannot be used to build or evaluate systems that are more intelligent than humans.

References:
https://en.wikipedia.org/wiki/Turing_test#cite_note-66

(ii) Discuss **TWO (2)** challenges to build a computer program that can win the Grand Loebner Prize, in which judges totally cannot distinguish it from a real human.

LIM JUN RONG

Data Inaccuracy

The Artificial Intelligence (AI) learns from the data integrated by the programmer, unlike human learning. It does not have or have low ability to study the data and determine whether it is correct or not before processing. For example, if the computer programmer inserts incorrect data into the program, the program will just accept, process and store it without second thoughts. It will then generate the information when being asked to do so. As a result, the judge can easily distinguish between the AI and human.

Reference:
https://www.scmp.com/business/china-business/article/2131903/biggest-limitation-artificial-intelligence-its-only-smar
✔ t

LIM CHIA CHUNG

First of all, the inherent irrationality of some of the programs is easily misinterpreted in the setting of the test as "whimsical conversation". Moreover, most damaging to the integrity of the test, is the realization that the Turing Test "relies solely on the ability to fool people", and thus is a "sorely inadequate test of intelligence." In this case, certain programs were built to give nonsense responses regardless of the input, but under the guise of "whimsical conversation" its speech patterns can be quite convincing.

5. The Chinese room argument by John Searle is one of the best known and widely credited criticism of the Turing Test. Briefly explain John Searle's Chinese room concept.

LEONG YIT WEE

The conclusion of John Searle's Chinese room concept is that programming a digital computer may make it appear to understand the language but could not produce a real understanding for the language.

For example , John Searle imagines himself alone in a room and understands nothing of Chinese but by following the computer program he is able to send appropriate strings of Chinese characters back out under the door and people outside the room are mistaken that have a Chinese Speaker inside the room.

Reference : https://plato.stanford.edu/entries/chinese-room/
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6. Try to chat with the following chatbots within a few minutes. Then discuss what are the characteristics/behaviors of a chatbot should have in order to mitsuku/deceive any human.

Mitsuku, the 5-time Loebner Prize winner - https://www.pandorabots.com/

Eliza, the first chatbot - https://web.njit.edu/~ronkowit/eliza.html (not the original Eliza website)

CHIN JUN WAI ✔ , CHONG JIA LOONG ✔ , KO ZHI XIN , KONG MUN JUN ✔ , KOW YEE HUI ✔ , LAI PEI XUAN ✔ , LAI XIN YI ✔ , LEE CHUN XIAN ✔ , LEE JUN XIAN ✔ , LEE KAH WEI✔

1. The chatbot should have more knowledge than the human so that it can act like the professional human to suggest or give advice to the human. (LAI PEI XUAN)

2. The chatbot should have replied us with messages that include short forms which most humans are doing nowadays. Furthermore, it should have stated that it does not know the answer when it cannot give us the correct answers instead of changing the topics of the conversation . (CHIN JUN WAI)

3. ChatBot should follow the trend and understand the “Internet Language” and short forms. (Kong MJ)

4. The chatbot will feel the emotion like a human. Some chatbot will respond and care about us like a friend. For example, when the users tell ELIZA about today is sad, then ELIZA will reply “Did you come to me because you are sad?”.(KOW YEE HUI)

5. The ChatBot replies too quickly, which is not possible for a human to do so I try to let her define robots. She literally replied to me 6 lines of definition in a millisecond. Also to some extent she tends to use repetitive sentences in some responses, I send mimicking human emotion symbols like “<3” and “XD” she replies to me with “Are you artistic? That looks like a heart.” and “Are you artistic? That looks like someone laughing.” (Lee Jun Xian)

6. The information provided by the ChatBot should be accurate and timely. For example, I asked about the information for who is the richest person in the world currently, then it replied Bill Gates but currently the founder of Amazon Jeff Bezos is the richest person in the world. This has proven that the information retrieved by the ChatBot should be improved to be more accurate as and information available people would like to know the current news. (Chong Jia Loong)

7. The chatbot should need some memory space to keep our conservation record like a human brain so it will not forget if we accidentally close the chat. Therefore, we do not need to inform the chatbot again. (Lai Xin Yi)

8. Chatbot does not entirely feel like chatting in front of a human because they cannot simplify that what we do usually using those abbreviation verbs such as expo stands for exposition. Hence, they will reply with something irrelevant to your topic. (Lee Chun Xian)

9. The chatbot should have many types of responses when chatting with real humans and respond to

them depending on humans' emotional state. For example, chatbot would like add some kinds of advertisement in case of its owner is happy because when human is happy, he/she would buy some kind of things that he/she wants very bad for example, the things/commodities he/she searches many times either in the shopping app or google.(Lee Kah Wei)

10.The chatbot should have logical responses. To ensure this human-like interaction, it is necessary to use a particular tone or dialect when chatting. Human should feel like they are having a real world conversation. The chatbot should ask human questions that are relevant to their preferences and needs. (Ko Zhi Xin)