**Unit 4 Algorithmics**

**Week 12 Submit Tasks**

1. Rishi says that the Turing Test is a waste of time because we already know that machines cannot think. Explain the error in his reasoning.

The Turing test is not designed to definitively prove whether a machine can think and is rather a thought experiment to helps us define what ‘thinking’ actually means. It is possible that machines may eventually pass the Turing Test, even if they do not think in the same way as humans as advances in AI technology come about.

(2 marks)

1. Briefly describe three shortcomings in the Turing Test’s aim to establish whether or not machines can exhibit human-like behaviour.

Three disadv’s of using the Turing Test as a way to determine intelligence is that, primarily it isn’t a test of intelligence rather a test of behaviour. AI’s today are capable of conversing with humans yet they do not biologically or physiologically function in the way that humans do, not do they form meaningful and non-black box [analysable and coherent] connections. The reliance upon humans to be judges instead of a universal criterion is another flaw of this test as we as humans tend to make A LOT of mistakes. Futhermore we aren’t the only ways who have intellect, animals like dolphins, whales, monkeys and bees can exhibit a wide variety of actions that we consider as intelligent yet a Turing Test only considers human intelligence

(3 marks)

1. State the ‘systems response’ to the Chinese Room Argument, and a standard reply.

The systems argument is an argument that considers an entire biological being or “man-made” system as a whole to determine intellect/understanding instead of cherry picking on behaviours or organelles like the brain and segmenting it to represent understanding. In the case of the Chinese Room Argument the entire room with the book, the Englishman and box of characters is one combined system that does infact reproduce the behaviour of a competent Chinese speaker, therefore the entire system understands Chinese.

However, Searle’s reply highlights that memorizing the book and characters now makes the man the entire system. Even thought the man doesn’t understand the language, as the system and the man are now the same being, he/it can still respond in Chinese.

(2 marks)

1. Can we ever prove that machines can be conscious?

Consciousness is often defined as subjective experience or sentience. The traditional approach to proving consciousness involves the Turing Test, where a machine must convince a human that it is conscious. However, this test doesn't guarantee consciousness, as a machine could simply mimic human responses without understanding. Furthermore, the nature of consciousness itself remains a mystery, making it difficult to define and measure objectively. So I don’t think there’d be a definite proof for this one anytime soon unless we ourselves realize what consciousness is.

(2 marks)

1. Suppose Google constructs an algorithm which is able to predict, with 99% accuracy, the most appropriate marriage partner within a 100km radius for whoever runs the program. It does this based on data gathered over a long time period, and gives you nothing but a name and email address (so there is no doubt you’ve found the right person!)

Discuss how this raises ethical issues in the following areas:

* Transparency
* Bias
* Human dignity

Transparency:

* Data Privacy: The algorithm likely relies on vast amounts of personal data, raising concerns about data privacy and consent. Users may not be fully aware of the data being collected or how it is being used.

Bias:

* Historical Bias: The algorithm's predictions could be influenced by historical biases present in the data it was trained on. This could lead to discriminatory or unfair outcomes.
* Cultural Bias: The algorithm might not be able to account for cultural differences or nuances in relationships, potentially leading to inappropriate or insensitive suggestions.

Human Dignity:

* Autonomy: The algorithm could undermine individuals' autonomy in making important life decisions such as choosing a partner. It could create a sense of pressure to follow the algorithm's recommendations.
* Emotional Well-being: The algorithm's predictions could have significant emotional consequences. If a user's chosen partner is not suggested by the algorithm, it could lead to feelings of doubt or inadequacy.
* Dehumanization: Relying too heavily on algorithms to make such personal decisions could potentially dehumanize the process of finding a partner, reducing it to a mere calculation.

(5 marks)