What is intelligence?

Computational Neuroscience Course homework 01

Vahid Shamsaddini*

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a. Moore's law: **Moore's Law** observes the doubling of transistors on microchips approximately every two years (18 months), leading to exponential growth in computing power. While the computing power of the **human brain** is increasing linearly at a very low rate. This makes it possible for computers to first reach the computing power of a single human brain and then the combined power of all human brains, a milestone scientists call the **singularity**, expected to occur by **2045**.

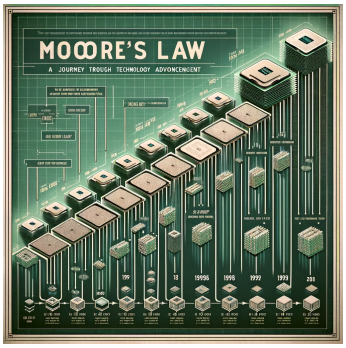

FIG. 1. A picture generated by GPT4 explaining Moore's law. I would suggest do not rely on numbers!

So, will they eliminate us all by 2045? Don't worry! This refers to computing power, not intelligence. Unlike us, computers require formal definitions and algorithms.

FIG. 2. No caption!!

b. What is intelligence? What is intelligence? We do not have an exact definition. However, we have some common understanding; for instance, an intelligent being will think, feel emotions, be conscious, and so on. Intelligence is a descriptive term that needs to be explained from your point of view.

> I propose to consider the question, *Can machines think?* This should begin with definitions of the meaning of the terms *machine* and *think*.
>
> *Turing 1950*

c. Then what should we do? We need to understand the model of the brain to some extent and attempt to mimic it in the field of AI.

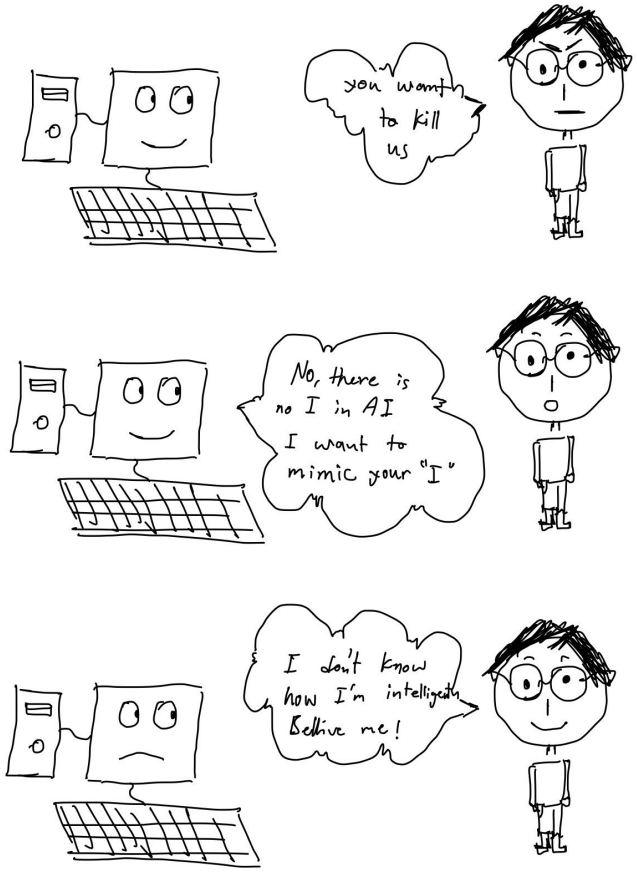

FIG. 3. AI-Neuroscience story!

* shamsvahid2@gmail.com