

ELON MUSK : NEURALINK, AI, AUTOPILOT,
and the PALE BLUE DOT | AI

Is consciousness something unique to humans,
or is it that permeates all matter?

- We can dramatically improve our understanding of consciousness (with complete accuracy?)
- digital intelligence will be able to outthink ^{unknown} us in every way and it will soon be able to simulate what we consider consciousness to a degree that you'd not be able to tell the difference.

Existential Threats of AI:

- concerned about AI Safety. (FDA, FAA, ... have a ~~gov~~ government review for AI just like the other areas have)

Does the work at Neuralink help us understand more about the human brain?

- Currently, the data regarding how brain works is very limited (fMRI, ... and other devices)
- What we need? — high precision sensors, stimulus & response to triggers (of neurons), how does it change the perception of the world.
- So, the brain is adjusting & on the other side the machine is adjusting → ultimately it's the MACHINE side that adapts to the BRAIN

- The vast majority of Malleability is on the MAXIMIZE side!

Do the same ML methods (NLP, ...) are going to be applied for the communication between the machine & the brain?

- Absolutely! (AI is basically 'neuralnet' and we're 'neural net')
 ⇒ digital NN will interface with biological NN.
- vast majority of our intelligence will be 'digital.'
- analogy: 'limbic system' v/s 'cortex'
 limbic system has no idea what cortex does; it just communicates that impulse to the cortex & tells it to satisfy that (hunger, sex, ...)

Future Impact of Neuralink (Science, Engg, Societal broad impact) ?

- first solve a lot of brain related diseases, spinal cord damages; ↑ quality of life
- address the existential risk associated with Digital Super Intelligence.
- Examples of applications: "giving somebody back the full motor control after spinal cord injury"
- restoring brain functionality after a stroke
- solving genetically inherited brain diseases

• Ultimately you will have 3 layers:

(1) Limbic System

(2) Cortex

(3) Digital Super Intelligence

• "We want to have a BMI before the 'Singularity' to minimize existential risk for humanity & consciousness as we know it."

Engineering or other problems faced by Neuralink?

• material science, electrical engg, software, mech engg, micro fabrication, chip design.

• Example problems:

- tiny electrodes that last long time

- ab. to read & simulate electrically in an electrically active area. (electrochemically)

- electro long lasting electrodes (decades)

- process the signal at low power

- automate the whole process, like LASIK

'Sincere Summer' & 'Autopark' in Tesla:

• features to make people's lives easier; also educate people about robotics/autonomy/safety

Carl Sagan's "pale-blue dot"!