

Mind Reading with Artificial Intelligence

For many years we have thought of mind reading as an impossible and an imaginary task. However, with the growth in the scientific field, hundreds of experiments and the fast-paced growth in artificial intelligence, mind reading has been made achievable.

First of all, what is mind reading?

Mind reading is the ability to discover or understand others thoughts and intentions without the means of normal communication.

Artificial Intelligence (AI) mind reading technology, which is often referred to as “brain-computer interfaces (BCI)’s”, basically works by interpreting brain signals and translating them to commands, texts or pictures.

There are different steps to how this works:

1. Firstly, the basic requirement for the functioning of AI is data. AI needs to be fed with data. So, the mind reading process also works in the same way. The technology starts collecting data from the brain. This can be done with the use of various methods, such as functional magnetic resonance imaging(fMRI) (where it measures brain activity with the changes in blood flow) and electroencephalography (EEG) (this is a method to record the electrical activity of the brain).
2. Signal processing: Here the raw data is processed to filter out noise and to extract relevant brain signal patterns. This is a very important step as the brain produces vast amounts of data, and not all of it is related to the task at hand.
3. Pattern Recognition: Machine Learning algorithms, which are core parts of AI, analyze the processed signals to identify similar patterns that may correspond to specific thoughts or commands.
4. Once a pattern is recognized, the AI system translates it into a command, text, or pictures. For example, if this technology is being used to help someone communicate, the AI might translate the brain signals into words on a screen.
5. Output: The translated commands or text are then outputted to an interface, such as a computer screen, allowing the user to communicate or control a device directly with the use of their thoughts.

Recent advancements in technology and science have made it possible to perform non-invasive mind reading, which means collecting brain data without the need for surgical implants. For example, a decoder developed by researchers

can reconstruct speech with high accuracy using only fMRI scan data, even when a person is silently imagining a story. Another system, called DeWave, uses a tightly fitting cap to record brain waves via EEG and decode them into text.

These technologies are very helpful for individuals who have lost the ability to speak, as well as for controlling devices in smart environments and prosthetics. However, these are still not fully functional and are in the developmental stages and require more research and further improvements to improve the accuracy and for general use.

Electroencephalography (EEG)



Functional Magnetic Resonance Imaging (fMRI)

