Brain Computer Interface

The Human brain is partly made up of around 100 billion “Neurons”. There are two types of neurons: Sensory and Motor Neurons. Sensory neurons carry information from our sense organs to the brain and the Motor Neurons carry information from nerve cells in the brain to our muscles, giving us the ability to control muscle activity such as speaking or moving. Neurons are in charge of everything we do and everything we think. Neurons work together by sending each other signals that allow us to have such functions as memory, thought, movement and also all our senses. Due to the neurons required for that being in different areas of the brain, the connection between them can be severed by damage caused to the brain, or even sometimes the Neurons themselves can outright be killed or disabled. This damage can occur both naturally and by accident. Natural causes include diseases such as Parkinson’s, Alzheimer’s and Strokes. This damage can also occur from blows to the head/brain or Spinal Cord Injury. The lost connection can make a person lose access to that part of the brain and all the functions it was responsible for – making it look like they have lost that function. In reality, the function is still there, but it loses its ability to communicate to the rest of the brain.

In the medical world, it has long been believed that damage caused to the brain by a stroke is permanent and irreversible. Damage caused by a stroke could often leave the person with a long term disability such as losing the ability to move an arm. Thanks to recent advancements in neurophysiology and Brain-Computer Interface there is now the idea that the brain under the right conditions can regain some of the lost function.

Brain-Computer Interface (BCI) allows us to monitor and determine a person’s intentions by analysing the signals generated by the brain.