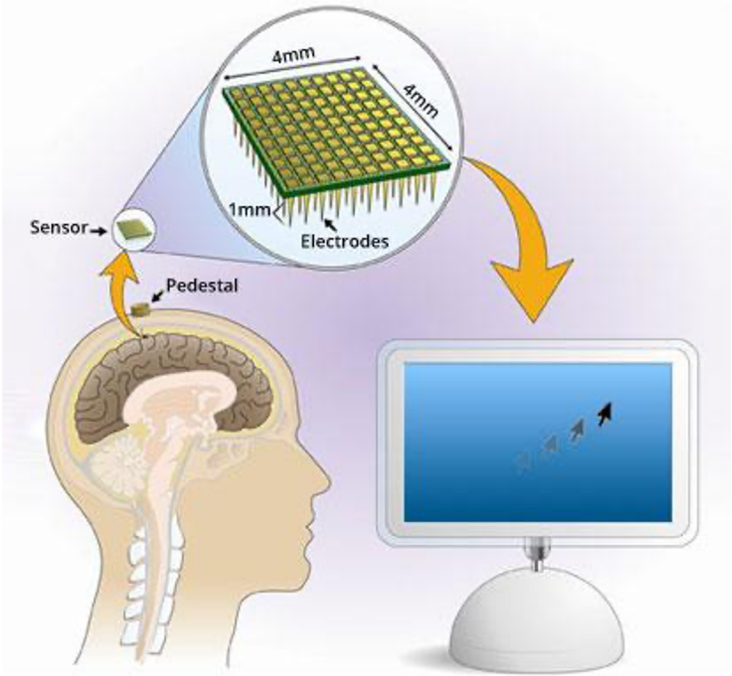
BrainGate: Treating Paralysis with Brain Implants

Olivia Houlahan

Overview of BrainGate

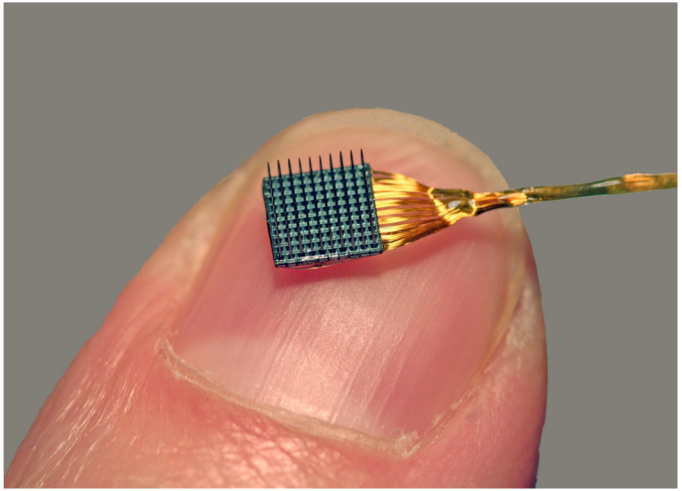
- Neural interface system
- internal sensor to detects neural activity and external processors convert brain signals into a computer-mediated output under the person's own control.

Main goal: Enable those suffering of severe paralysis or other neurological disorders to live independently



How it Works

- Microchip is embedded in the primary motor cortex
- Neural activity is read using microelectrodes (100+) within the chip
- Neural signals are sent to a computer and encoded
- Actions are carried out by computer



Convergence of Computer Science and Neuroscience

Developed by Cyber Kinetics (biotech) and the neuroscience department at Brown University

Example of how different fields can collaborate to advance technology in order to help society.

Implications of BrainGate

Once the mechanism for transferring thoughts into computerized action is developed, the technology is limitless.

- Medical assistance
- Video Games
- Social media

References

Regalado, A. (2021). A computer mouse inside your head: Paralyzed people are using brain implants to type and move robotic arms. Is this the next great computer interface for all of us? *MIT Technology Review*, *124*(6), 29. https://link.gale.com/apps/doc/A684541414/CDB?u=nysl_ca_skidmore&sid=bookmark-CDB&xid=55faac2f