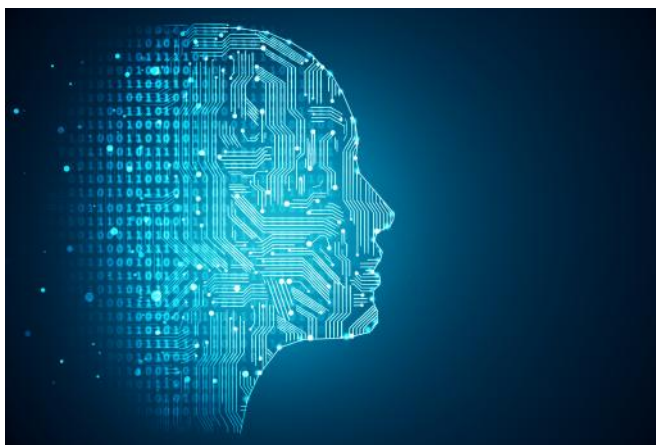


Real-time emulator for intelligent deep-brain stimulation

Emulating intelligent deep-brain stimulation in real-time.

Applications: Test advanced neuromodulation closed-loop in neuroscience research applications, including personalised treatment



Features	Benefits
The software and hardware emulators resourcefully utilise advanced accurate mathematical models of how patients' physiological brain oscillations respond to electrical stimulation pulses	Potential to use the emulators to reduce/refine research studies and in vivo testing requirements; Allows clinicians to test clinical interventions beforehand to improve efficiency and patient safety
The emulators estimate the dynamic evolution and steady-state responses of the target brain area's local field potential (LFP) to actual electrical stimulation pulses in real-time	Results obtained from the software and hardware emulators offer high potential to support regulatory submissions

Features	Benefits
The software and hardware emulators can be adapted to most neurological disorders, such as Parkinson's disease, epilepsy, dystonia, and essential tremor	Allows thorough tests for scenarios that are not easily reproducible or impossible to reproduce with animal testing
Any external or implantable voltage or current neurostimulator can be connected to the hardware emulator for thorough testing and validation before patient use	Offers compatibility with all existing deep brain stimulation systems

Available for

- Co-development
- Consulting
- Licensing

To find out more, contact enquiries@innovation.ox.ac.uk and quote the project number.

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