The Cyborg Experiments

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Biohacking
Magnet Implants
Culturing Neurons
Robot with a Biological Brain

A closed loop interface between a biological network and a robot

- Biological neural network
grown directly on to multi-electrode array
- Dimensionality reduction, spike train analysis
- Robot on powered floor
Approach

- Culture brain cells directly on to a recording surface and re-emboby the ‘brain’ within a robotic body.

- Multi-Electrode Array (MEA) allows recording from 128 electrodes across the entire culture.

- TiN Electrodes 30µm diameter

- Neurone 200µm
Deep Brain Stimulation
Possibilities

- Memory
- Communication
- Senses
- Multi-dimensional thinking
- Extending the body
- In built machine thinking – Slimplant
- Maths + speed of thinking
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Youtube ‘rat brain robot’ .. ‘cyborg’

wikipedia .. Kevin Warwick

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