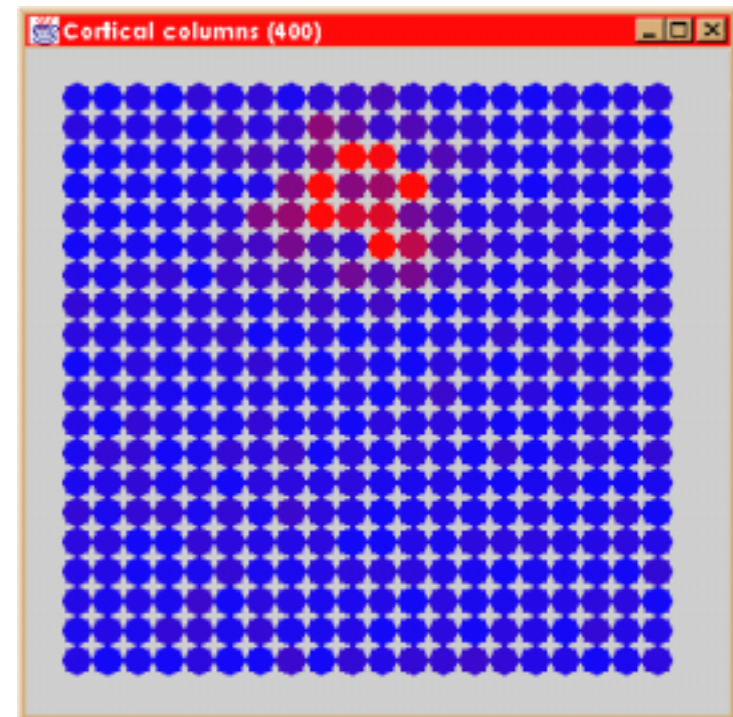
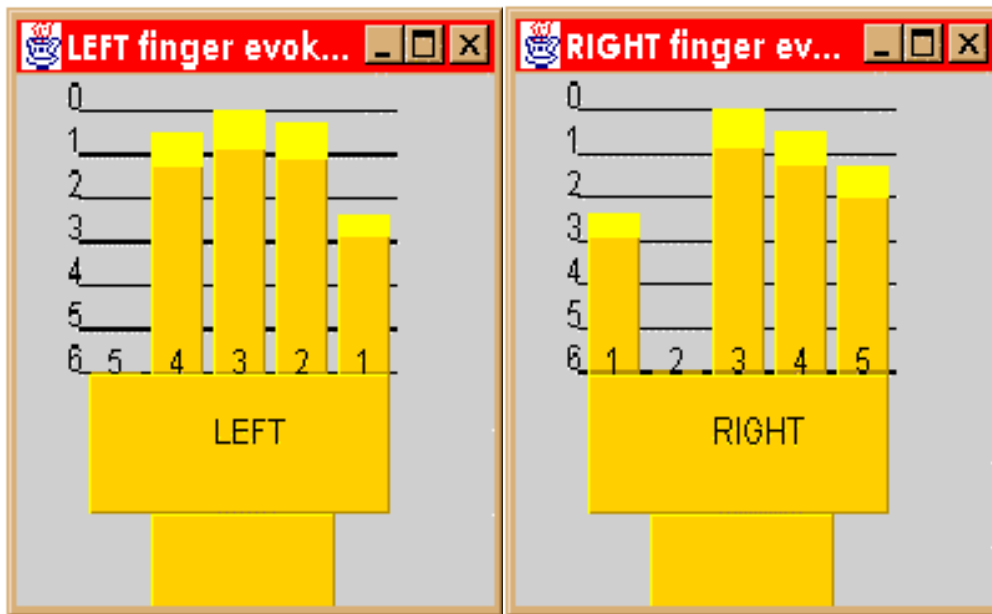


Can computational models emulate cognitive processes?

Neuromodelling: Neural processors for the understanding of human cognition

We are conducting an interdisciplinary investigation on how connectivity affects neural processing in the human cortex. Artificial neural architectures are used to model selected cognitive processes, helping to bridge cognitive neuroscience to neurobiology. Our research also aims to investigate whether the underlying principles used in these models can produce emergent activations to match the ones recorded using current methods for imaging the brain. The robustness of our algorithms are evaluated when artificially produced lesions, such as those that cause Multiple Sclerosis and strokes, are simulated at the same time as the cognitive processes we are trying to model.



Artificial Neural Network controlling flexions of virtual fingers performing a Mozart sonata and exhibiting fMRI-like activations.