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## **Figures:**

Figure a: Action encoding neuronal brainmap.

Figure b: Experimental setup of mouse.

Figure c: Possible mouse stimuli responses.

Figure d: jPECC analysis shows population activity in VIS and frontal cortex.

Figure e: Neuropixel probe.

Figure f: Vision neuron displayed during Nesting process.

Figure g: Choice neuron displayed during Nesting process.

Figure h: Action neuron displayed during Nesting process.

Figure i: Half-Gaussian curve.

Figure j: Allen Institute Static Brain Model.

Figure k: Figure comparing original data with denoised data.

Figure 1: Spike localization in cartesian coordinates.

Figure m: Allen Institute Static 2D Brain Model.

Figure n: Significant improvement of crispness of the average localization image after registration.