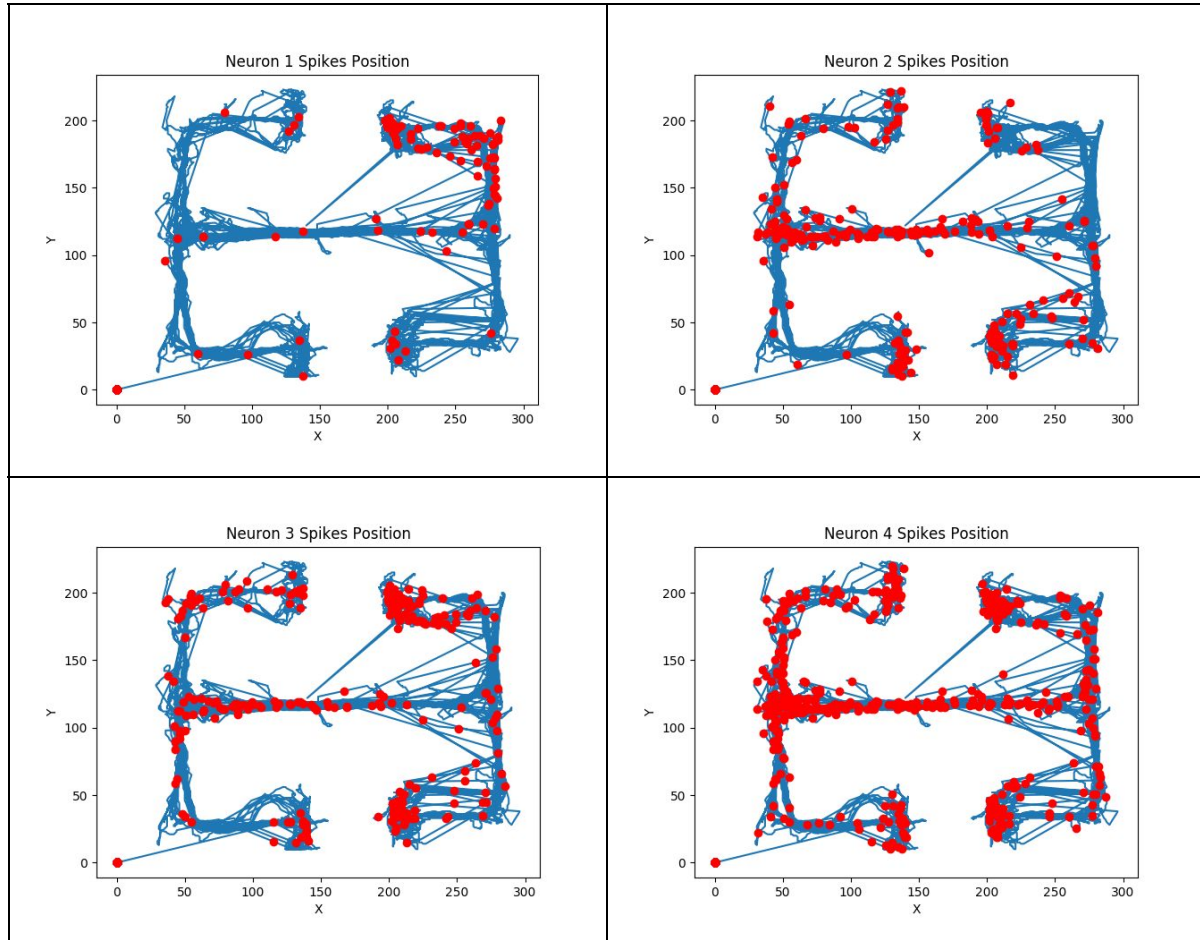# Computational Neuroscience - Coursework 2
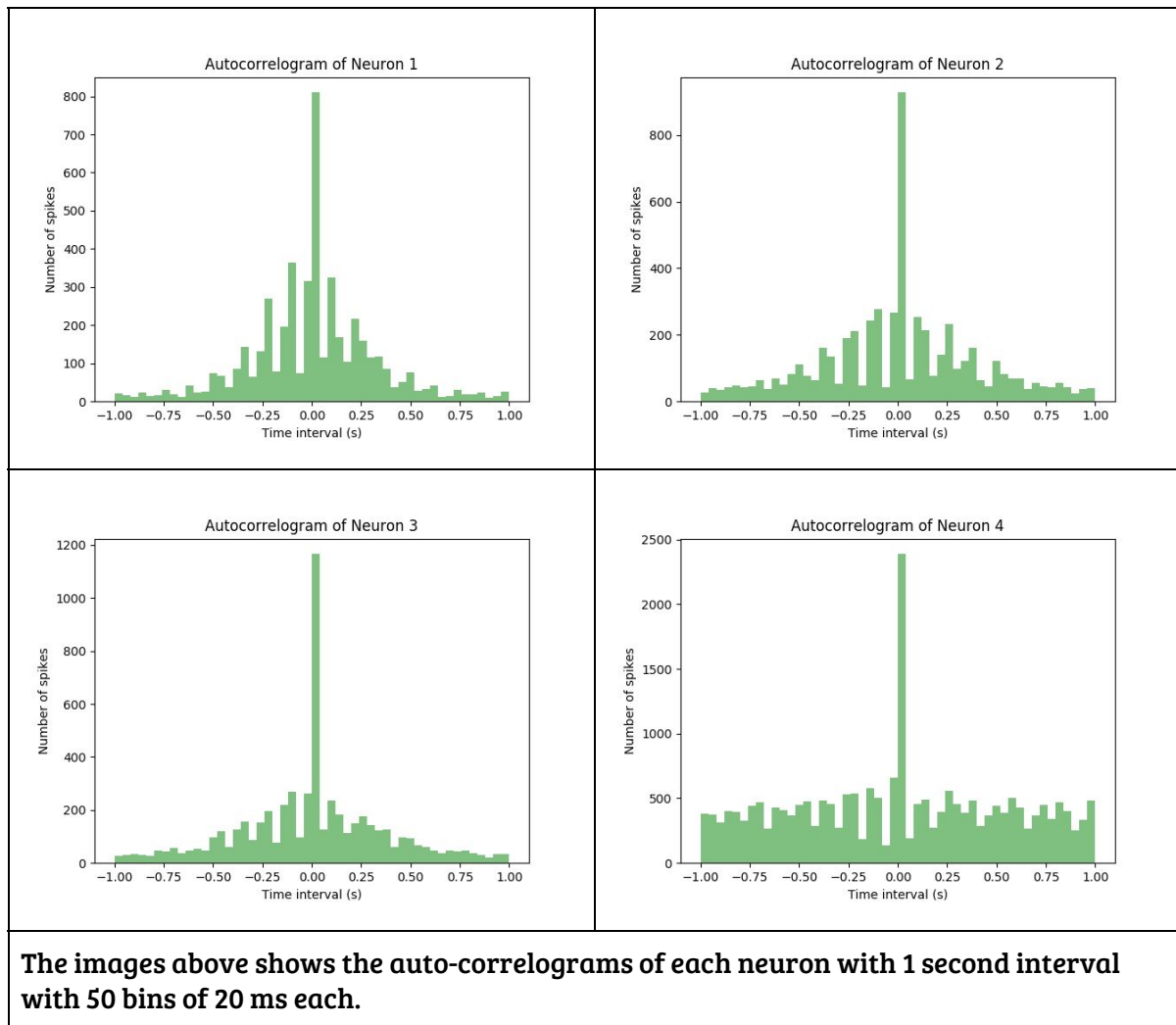Rizaldi Tri Yanuar
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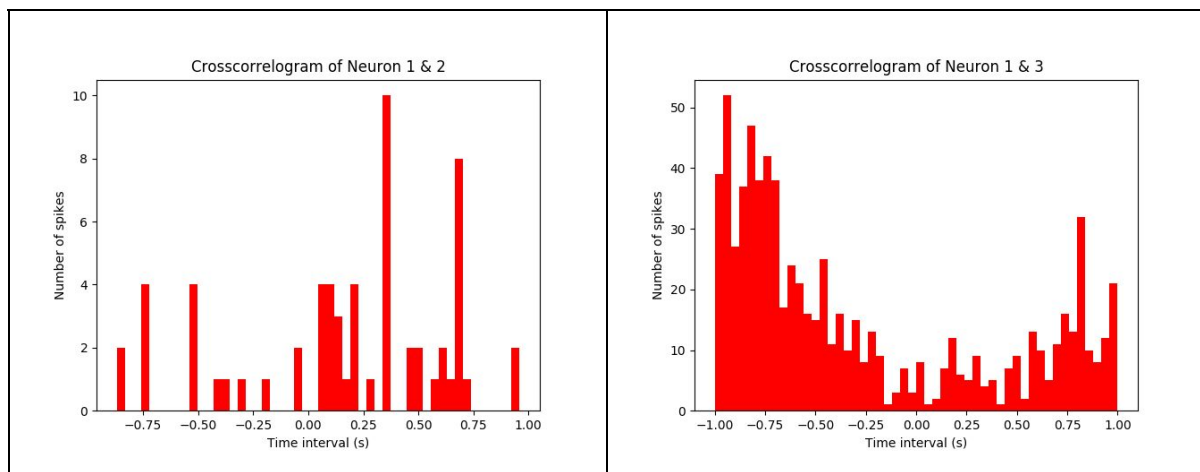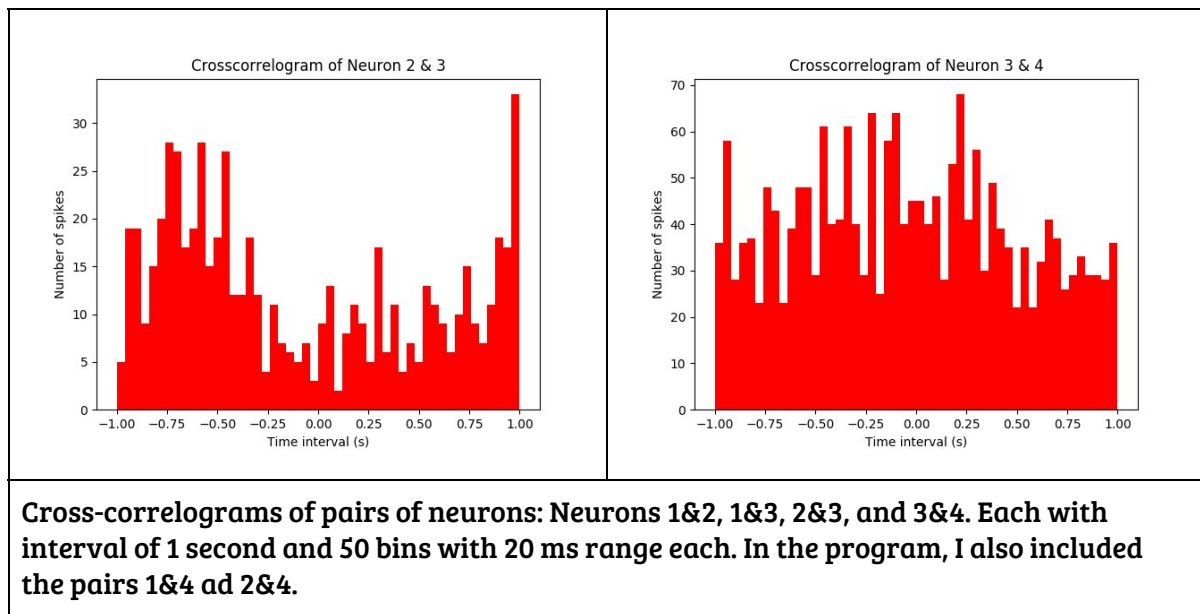1. Plot showing positions in which each neuron fired spikes.

The graphs above shows the positions where each neuron fired spikes in red dots, while the blue lines shows the progress of the rats' movement. Neuron 1 (top left image) rarely fired spikes, with the most number of spikes were when the rats came near the C1 area (top right position), probably during stage 3 or 4. Neuron 2 (top right image) has a significantly larger number of spikes and more scattered than Neuron 1, with the most number of spikes happened in the "bridge" area, possibly during stage 2 or 5, and in the C2 area (bottom right). Spikes position in Neuron 3 (bottom left image) is almost as scattered as Neuron 2, but the most spikes were fired in the C1 area, similar to Neuron 1. Neuron 4 (bottom right image) seems to have the most number of spikes fired during the whole experiment, with the most spikes occurred in the left side of the "bridge" area, close to the F1 area (top left), probably during stage 1 or 6.

2. Autocorrelograms of Neurons

The images above shows the auto-correlograms of each neuron with 1 second interval with 50 bins of 20 ms each.

3. Cross-correlograms of pair of neurons

Cross-correlograms of pairs of neurons: Neurons 1&2, 1&3, 2&3, and 3&4. Each with interval of 1 second and 50 bins with 20 ms range each. In the program, I also included the pairs 1&4 ad 2&4.

4. Firing rates of each neuron.

The graphs above shows firing rates of each Neurons with 1 second interval. To convert the times to seconds, I divided each value with 10000 and use math.floor() function and add the number of spikes to the respective time.