11.10.2024 Day 5.

Code yourself! Adding thalamus to the network.

Main tasks for today:

Today we will try to expand our piece of code by adding another region to the brain model (thalamus).

1. Let’s find out what is a thalamus?

Another piece of information on it could be found here:

<https://www.youtube.com/watch?v=IF8_82e9RmQ&ab_channel=NeuroscientificallyChallenged>

1. Why thalamus is important in Parkinson’s disease?

To remind us about basal ganglia structure:

<https://www.youtube.com/watch?v=OD2KPSGZ1No&ab_channel=NeuroscientificallyChallenged>

Now we will expand parts of our code to create following modules:

1. Create a plotter for thalamic neurons.
2. Create a system of differential equations related to thalamic currents using the papers from the previous days.
3. Create thalamic synaptic connections in the model.
4. Find the frequency of thalamic spikes.
5. Let’s upload our changes to github.

Learning outcomes:

1. Getting familiar with thalamus and its function.
2. Now we can consolidate what we have learned in the previous dates and create our parts of code related to modeling of the thalamus as a part of basal ganglia network.
3. Remind us on how to use version control using github.