

Some proposed modification in N2S3:

1- **Evaluation of MNIST:**

- Using training data set (60000), stop STDP and test with 10000 test data set.
- Storing input digit and corresponds output spike in a same row of log file for evaluation. (Recognition Rate)
- Saving the synaptic weights in a log file. (this is the result of file that can be evaluated in other networks. (may we need to add first input layer with different neuron properties operates as a buffer.
- Add 150 ms interval time + 350 ms for reading each digit
- Add hidden layer to the NN.

2- **RBM initialization**

Instead of random weight initialization, we can use trained weights of Mazdak works which has been done with the same inputs and outputs (for MNIST)

3- **Inhibitory weights**

Instead of using WTA it is possible to check the network efficiency with inhibitory beside excitatory weights {1,-1}.

4- **Add the ability of choosing different**

Neuron Model:

1. Linear leaky integrate-and-fire model
2. FitzHugh-Nagumo model
3. Izhikevich model

Synapse Model:

Different memristor models