

31/8/2009

Winter 2010 Semester

Pattern Recognition Using a Neural Network for Storing Pictures Analogically

Description:

Synaptic Time Dependent Plasticity (STDP) is a synaptic mechanism in the brain, believed to be one of the ways that the brain remembers. It is part of the associative memory mechanism, where its dynamics is based on the neurons activity. It is extensively investigated in one synapse, but in a network it is still an exciting research field.

Aim of the Project:

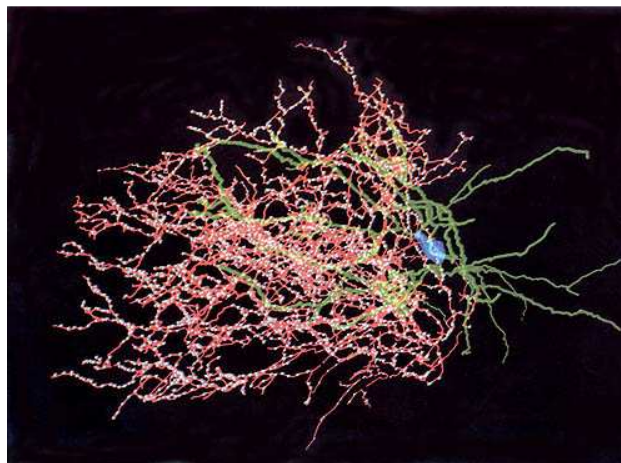
The aim of the project is to build a Matlab simulator which imitates a neural circuit with STDP. Based on this, a memory device for storing pictures analogically will be built.

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Duration: One semester (may be extended to two semesters)

Requirements:

- Biological Signals and Systems (046326) or Biological Neural Networks (049041)
- Some Matlab and C/C++ programming skills



A neuron (colored in green and red) and its synapses (colored white) of a rat.