Think of a title later

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Abstract

Abstract goes here.

Contents

1 Introduction

Write an introduction here.

2 Methods

In this paper, we used the simulated Integrate and Burst model introduced in [1].

2.1 Integrate and Burst Model

Equations and paper reference here.

2.2 Learning

Introduction to what we did.

2.2.1 STDP Learning

Talk about STDP learning in this implementation.

2.2.2 Hebbian Learning

Talk about Hebbian learning here.

2.3 Parameter Choices

Talk about how we chose parameters here.

3 Results

Introduce the big idea and what we got.

3.1 Parameter Tuning

- 4000 Hz doesn't work! (Burst Plot)

- Mention annealing and our choice of r_{in}, η and ϵ. Name the two data sets we refer to for the remainder of the paper. (Scatter Error Function)

- Setting w_{max}. (Burst History)

3.2 Convergence and Stability

- Demonstrate the stability of our IB model by showing the firing rate plot and how it splits according to r_{in}.

- Plot Weight and WW^T for 4000 and 6000 Hz to show some level of convergence.

- Plot error function over time from normal and from permutation matrix

- Describe why the error function converges away from 0.

3.3   Hebbian Learning versus STDP

- Introduce the idea of the refutation.

- Give a theoretical description why the type of learning should be relatively unimportant.

- Compare plots (WW^T, Error vs Time, Burst History).

4   Discussion

Further improvements that could be made to our model and where this research could be taken.

5   Summary

Quick summary of our results and everything.

References

[1] Ila R. Fiete, Walter Senn, Claude Z.H. Wang, and Richard H.R. Hahnloser. Spike-time-dependent plasticity and heterosynaptic competition organize networks to produce long scale-free sequences of neural activity. Neuron, 65(4):563 – 576, 2010.