Project 4

for NeuroComputing/Theoretical Neuroscience 2016

This assignment is due on Monday, April 4 by email to NeuroCompDal@gmail.com.

1. Extend the program maze example from the manuscript to the full T-Maze of Figure 1.1. Solve this maze with dynamic programming and TD learning, and discuss the experiments and the difference in these approaches.

2. Modify the program dnf.m to simulate two simultaneous inputs with the same strength at 1/4 nn and 3/4nn and observe the network activity. Change the strength of one input and discuss the results. Include a plot of the time evolution of the neural field in your report as well as your brief discussion of the results when varying the relative strength of the inputs.

Additional question for CSCI 6508:

3. Modify the program som.m to show a learning curve. To do this, define the distance between the cortical map after learning for a certain number of trials of previous maps. Report your definition of distance and the corresponding learning curve in your report.