Department of Computer Sciences
University of Salzburg

PS Natural Computation
SS 13/14

Design and implementation of a robot task

July 3, 2014

Project Members:

Auinger, 1220321, auingerto@stud.sbg.ac.at
Müller, 1123410, mueller110@gmx.net
Pollhammer, 9520061, pollhammerand@stud.sbg.ac.at
Schwarz, 1220024, schwarzst@stud.sbg.ac.at

Academic Supervisor:

Helmut MAYER
helmut@cosy.sbg.ac.at

Correspondence to:

Universität Salzburg
Fachbereich Computerwissenschaften
Jakob–Haringer–Straße 2
A–5020 Salzburg
Austria

Abstract

The main goal of this project is designing a task that demonstrates that the usage of neuromodulators can influence the evolution of a neural network in a positive way. For implementation and simulation of the task we use SIMMA "a simulation framework mainly developed for the simulation of mobile autonomous robots and their behaviour".

1 Introduction

In this class our team of four people design a task for neural networks. The main goal is to demonstrate that the usage of neuromodulators can influence the evolution of a neural network in a positive way. After careful considerations we decided to implement a robot whose task it is to take several pegs to a certain place. By pushing the pegs to the certain place the robot has to avoid some enemies. If the robot is captured by an enemy, he will get penalty seconds. The robot will learn this task by means of neural networks. We hope that neuromodulators will influence the evolution of our neural network in a positive way. So the neuromodulators assist our robot by learning this task. For implementation and simulation of the task we use SIMMA "a simulation framework mainly developed for the simulation of mobile autonomous robots and their behaviour".

2 Links

- Project Page: `http://student.cosy.sbg.ac.at/~cmueller/natcomp/`
- PS Page: `http://www.cosy.sbg.ac.at/~helmut/Teaching/NaturalComputation/proseminar.html`