Artificial neural nets

Preface

We use Artificial Neural Nets(ANNs) to control a “cart” within a simulated environment. The environment is essentially a game, where the performance of the ANN is scored by how long it can use its control of the cart to balance a pole on top of it. We then use the ANNs with the best scores to make new generations of ANNs, and repeat the process in an attempt to evolve the ANNs by way of natural selection.

Introduction

An Artificial Neural Net is a collection of nodes, and connections, that are put together to simulate the theoretical workings of neurons found in biological entities. From a programming perspective, a ANN receives a number of inputs from a number of sources that are given different weights, the ANN then decides on an output. In the Simulated environment in this project there are two possible inputs the ANN can output: move to the left or move to the right. For every frame of the “game”, the ANN is given all the parameters of the scene

Mutation method

Summary