Project Plan - Aidan Pappas - ECE-497 Evolutionary Robotics Final Project Plan

For my final project I plan on expanding my midterm project to include Predatory-Prey behavior between a sandworm and a camel.

Baseline

First-Step Goal

Stretch Goal

Far Stretch Goal

1. Implement Bodies – The bodies will include a worm and a camel
   1. Body (Abstract)
   2. Worm
   3. Camel
2. Implement Environment – The environment will be a desert with pool for the camels to drink
   1. Desert
   2. Pool
   3. Dunes
   4. Spice
3. Implement Simulation
   1. Simple Simulation
   2. More Advanced Simulation
4. Implement Network – The network will be a multilayer CTRNN with tanh output activations and leaky relu hidden activations
   1. NeuralNet
   2. Mircrobial
   3. Improve Network using Torch
   4. Other Algorithms?
5. Train – Training with camel/worm positions varied, pool positions varied, and camel/worm starting angles and speeds varied
   1. Worms Hunting Camels
   2. Camels Surviving
   3. Advanced