Final Project Description

COCS 4560/5560
Modern Robotics
Spring 2018

Individuals or groups will use the software system built during the homework assignments (or another platform of their choosing) to perform an experiment in evolutionary robotics. This must include incorporating at least one new feature that was not implemented during the homework assignments (e.g. an improved evolutionary algorithm, novel morphologies, and/or different environments, tasks and fitness functions). These new features for the project may be inspired by a paper that we've read this semester, but you are encouraged to incorporate additional new and creative ideas, whenever possible (this will make your projects more fun and suspenseful – as we won't know the outcome of your results a priori, and also makes it easier to extend the idea to a full conference paper that would be of interest to researchers in the field).

Expectations will be higher for groups than individuals, and for groups of three instead of two. Groups of four or larger are not permitted without permission from me. Graduate students are expected to perform more in depth, rigorous studies, and should aim to produce something that would be accepted at a peer-reviewed conference. Undergraduates are encouraged, but not required, to also meet this standard.

A video describing the experiment will be presented at the end of the semester. This video should be about 5 minutes in length. This should include:

- a title slide, including all group member names and course numbers (4560/5560)
- a brief introduction/motivation/background for your choice of project topic
- a description of the methods that you used
  (with an emphasis on the new features that you incorporated)
- the results of your optimization/data collection
  (ideally including fitness plots as well as demonstrated behaviors, and comparing your novel setup to the standard setup in the homeworks, if applicable)
- a discussion of what your results imply (for other researchers in the field, and also for future work within your particular setup)

Please have one member from each group email a link to a YouTube video to ncheney@uwyo.edu by 11:59pm on Thursday 5/3.