Project 5 Proposal

Problem description: Solve Fetch with a vanilla machine learning algorithm such as Policy Gradients

Approach:

1. Discretize space and implement policy gradients to the problem
2. Ensure that the algorithm works on a simple problem (cartpole)
3. Apply to FetchPush-v0: get the robot to push a box to a desired location on table
4. Compare results (training time, goal completion percentage, solution path length), etc. to baselines (ddpg, etc.)
5. Transfer learning: see if the algorithm is able to solve the problem of picking up the box and placing it anywhere in 3D space.

Challenges:

1. Implementing the algorithm
2. Tweaking the algorithm to work with the problem space
3. Tweaking the parametrization of the problem space or control space of the robot
4. Computational resources