# HW3 — 6.884: Computational Sensorimotor Learning

Cameron Hickert

May 2020

## 1 Problem 1 (PRELIM): Learning a policy with Behavioral Cloning

The source code is included (for this problem and the next) in Python files in the zipped folder. To execute the code for this problem – which learns a policy with behavioral cloning, generates training loss plots, calculates the average L2 distance between the object location and the goal location, and creates videos showing evaluation of the learned policy – run the p1.py file.

I'll follow up to this preliminary version (later tonight or tomorrow) with a detailed description of policy architecture and loss function used for training.

Two training plots showing loss as a function of time are below.

Avg. Loss as a Function of Time
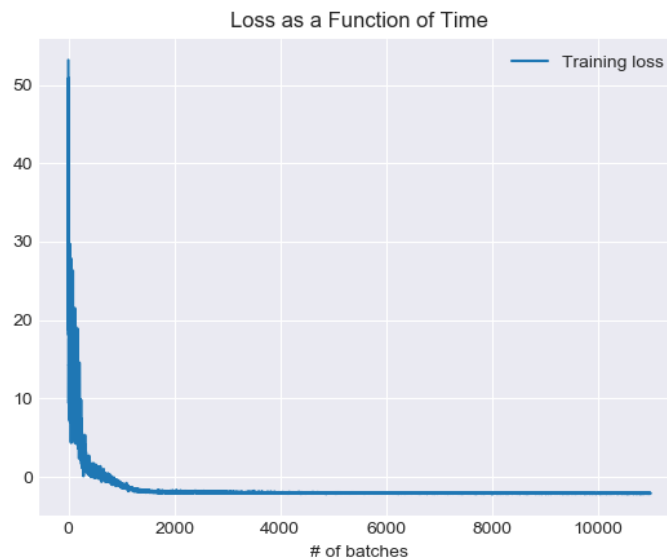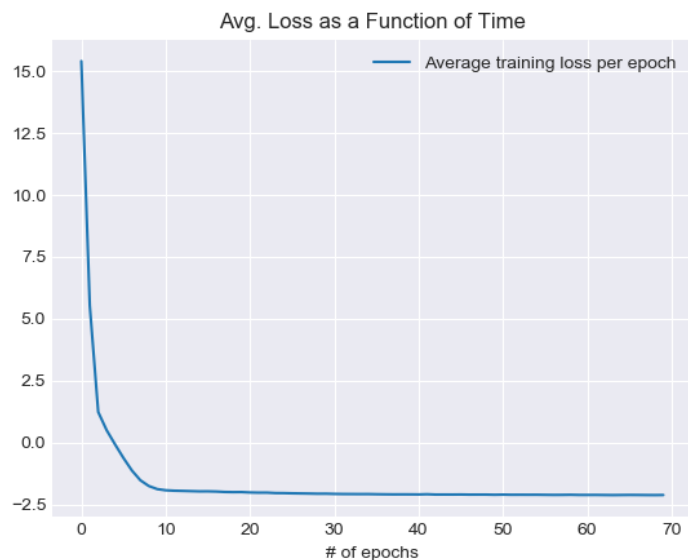
After evaluating the learned policy on 100 episodes, I found the average L2 distance between the object location and the goal location to be 0.205, which is within the 0.22 bound suggested in the problem statement.

The video showing evaluation of the resulting policy on 10 episodes is included in the zipped file. These videos show the model is able to execute fairly successful pushes (though not entirely optimal).

## 2 Problem 2: Fine-tuning with Reinforcement Learning

I'll have this problem to you later tonight or tomorrow – just wrapping up the final coding bits and improving readability.

Acknowledgements: In working on this problem set, I worked with or spoke to Anurag, Josh, and Sunayana.