

Project Proposal

Due March 1, 2022

1 Project Description

Write 2-4 sentences describing your project in layman's terms. If you want to include a sketch or picture in this document, you can add it like this:



Figure 1: Example Figure

2 Learning methods

What learning methods are you considering (supervised learning, reinforcement learning, etc)? If supervised learning, have you thought about what architecture or loss function to use? If reinforcement learning, do you know what state and action space will you use?

3 Dataset or Simulator

How will you train the network or agent? If you are going to use a dataset, what will it be and how will you generate the examples and labels? Also, have you considered data augmentation? If using a simulator, how do you plan to set it up (in terms of robot placement and other objects) and what will the reset and step functions do? What will your state and action space be?

4 Running on Real Robot

Do you plan to train or evaluate your learning method on the real xArm robot? If so, what will you need (in terms of additional robots, specialized end-effector, cameras)? If not, why do you think your project will not work on the real robot?

5 Simplifications

Deep learning is hard and takes time. It is best to scale up the complexity gradually. What simplifications could you make to make your problem easier? Consider restricting the number of objects, including ground truth information from a simulator, or reducing the action space.

6 Open Questions

This part is optional. But if you have questions about your problem or proposed methods, you can add them here. I can address them directly when I provide feedback on this proposal.