Problem Set 5

Introduction

This problem set has two components:

1. Grasp analysis via optimization in `set_5_grasp_analysis.ipynb`
2. Dynamic control for manipulation in `set_5_mpc.ipynb`

Download all components in a .zip

Download here a .zip with the notebooks and few other important files (set_5.zip)

How to do this Problem Set

First make sure you've gone through the install instructions (install_drake_docker.html) for Drake + Docker. If you successfully completed previous problem sets, then you should already be set!

This problem set is similar to the previous problem set in structure:

- The jupyter notebooks are not needed for submission. Instead, the notebooks are only used for visualization and explaining the problem set. The actual code you will need to write will live inside `.py` files to be submitted.
- The problems are mostly hands-on.

Again we've tried hard to document the args/returns of functions needed for testing, and additionally add print statements in the testing code to help ward off hard-to-parse errors during testing.

To run the notebooks, do this. (Make sure to have the notebook script in your terminal's working directory, and specify the path to the `set_5` unzipped folder)

```
## or use the notebook script for your system
./docker_run_notebook.sh drake-20180425-experimental /path/to/set_5
```

How to submit this Problem Set

We will use Gradescope to grade the problem set. Information for how to access Gradescope for the class is on the Piazza forum. (Although all course content is open, we only do grading for officialy enrolled students at MIT.)

Please note that you need to make **only one** submission for the problem set.

This submission is:

1. **Autograded submission**
    - Upload `grasp_metrics.py` and `planar_hand.py` to "Problem Set 5, Code Submission" on Gradescope. Don't forget to upload both of them!
    - In our testing, Gradescope will give you a grade within around a minute. You can resubmit as many times as you'd like before the deadline -- but be sure to give yourself plenty of time before the deadline to iron out any issues. If you have any trouble, ask on Piazza and we're happy to help you out!

Please carefully follow the directions for each submission.

Good luck and have fun!

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