

AI & Robotics: Research

Exercise 4

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Summer 2020

Please hand in the review to Ingmar Schubert (ingmar.schubert@tu-berlin.de) before our session on May 29. Try to use LaTeX.

1 Write a formal Review for the LeTS-Drive paper

The structure of a standard paper review is as follows:

- Summarize briefly what the paper contributes. This should include the general aim/motivation, theory/methods contributions, and evaluation. (1 paragraph with about 10 lines, 80 characters each.)
- Major comments. This is the main part of the review. This should cover the four aspects of *originality*, *quality*, *significance*, and *clarity*. Here is what these mean:
 - Originality: Does the paper make significant novel contributions? What are they exactly in your opinion? Is the related work discussed well, and made clear how the proposed methods go beyond related work?
 - Quality: Are the novel contributions (methods or theory) done really well, or is it all just a hack. E.g., are the methods derived rigorously from first principles, is the approach general, clean and sound.
 - Significance: Are the results significant, i.e., does the method perform significantly better than previous work? Therefore, are the contributions an advancement to the field? Will you expect the paper to have significant impact on future research?
 - Clarity: Is the paper well written and things clearly explained.

But your review can more freely discuss these aspects. Often, these aspects are discussed *after* you gave technical comments as follows:

The beef of your 'major comments' should be specific technical comments that you have on the paper. Especially if you see certain parts critical or believe they could/should have been approached differently. Here is a snippet of a review I wrote some time back

Let me first comment on the methods itself, and below comment on its relation to existing work.

Grasp adaptation ("Grasp Synthesis") is done using a cost formulation. In particular (around eq (10)) it is assumed that surface normals can be approximated and the object surface is fitted. Also the obstacle avoidance terms in CHOMP require signed distance function representations of the objects. In this case, grasp synthesis can be described as an optimization problem. This bears the question why the path and grasp optimization problem have not been formulated jointly from the start, as is done in other work [see below].

Introducing weights (probabilities p_i) for the grasp goals is an interesting idea. However, this rather seems to be a mixed integer problem...

and the review continued with 3 more such paragraphs, also citing other literature.

Your 'major comments' should include such technical comments and points of critique, in relation to discussing originality, quality, significance, and clarity.

- Minor comments. Here you add smaller technical comments, which are not relevant for judging (accept/reject) the paper. This typically lists typos (there are several in the LeTS-Drive paper), suggestions to improve writing, or suggested fixes in notation or small bugs in equations.

This is typically a list of suggestions, each 1 or a few lines.