AI & Robotics: Research
Exercise 8

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Please hand in the review to Ingmar Schubert (ingmar.schubert@tu-berlin.de) before our session on July 1st. Try to use LaTeX.

1 Write a formal Review for the PoseRBPF paper

(I mark in italics the changes from the previous formulation in exercise e04.

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. *"Comments" here means, your own subjective opinions on specific parts of the paper; the major comments you subjectively have on specific parts that eventually relate to originality, quality, significance, and/or clarity of the paper.* Here is what these four aspects 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 a advancement to the field? Will you espect the paper to have significant impact on future research?
    - Clarity: Is the paper well written and things clearly explained.

    However, your review does not have to sequentially discuss these four aspects. Instead, discuss positive or negative points of the paper (relating to originality, quality, significance, and clarity) that you found most important and which are the basis for your judgement on whether this paper should be accepted/rejected. E.g., if you see certain parts exceptionally strong, or critical, or believe they could/should have been approached differently. Here is a sniplet 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.

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

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