KeyPoints

1 [Summary Review] **A quantitative evaluation of the accuracy and a comparison with the alternative slower k nearest neighbor graph methods**.

[Review 1] **If this method has any advantages over the existing kNNG methods other than query runtime performance**.In Table 1, there is no similar comparison of matching error, such as in Table 3. There is also no comment in the paper about accuracy improvements.

[Review 3] **The "RC-kNNG Retrieval Performance" doesn't explain whether the alternative indexing structures retrieve the same parts.**

【加实验：给出Table 1内几种方法的精度并给出visual result；对比几种方法的搜索效果】

Do experiments to quantitative evaluate the accuracy among the 4 methods in Table 1.

[I do not understand what does “a comparison with the alternative slower k nearest neighbor graph methods”(Summary Review) mean!]

2 [Summary Review] **A comparison to simply segmenting the database.**

[Review 3] The primary weakness is a missing evaluation of the fundamental premise. The premise of the approach is that the example database becomes larger by implicitly containing all possible segmented parts. This is interesting and a worthwhile idea, but it is unevaluated. **Why not simply run segmentation on the database during preprocessing**? Then any of the approaches mentioned in the related work (sketch-based or 3D shape-based) which retrieve similar entire shapes from a database could be compared to. Can users no longer find the sub-parts they are looking for?

【加实验：与pre-segmentation做对比。或修改文字把这条意见说过去】

Our method could be used in many applications. In which application should we make comparison with the pre-segmented approach? Anyone? If so, I would like to choose the application of “part suggesetion”. Because in this application, our method could be outperform the “pre-segmentation” approach.

3 [Review 2] In the result figures, the retrieved results are not very similar to the sketches. This can be good or bad. In the good case, no great matches are available in the system and the system does a good job in retrieving the best available matches. In this case that indicates robustness. In the bad case, there would be many similar or better retrieval candidates that the system fails to identify. How can I tell? Therefore, the traditional evaluation of retrieval problems uses quantitative metrics, e.g. precision, recall, F-score, precision-recall curves, average precision, ... and a comparison of these metrics to competing algorithms. **This submission does not provide quantitative results of the quality of the retrieval.**

【不想加实验，想办法用文字说过去：本意见内提到的“precision recall, F-score, precision-recall curves”无法完成。得想个办法把这条意见说过去！】

We have provide the quality of the retrieval in Table 3.

I **do not think it is necessary** to add the traditional evaluation of retrieval problems and make comparison to competing algorithms suggested by this comment. Is it acceptable not to add the evaluation and make comparison suggested in this comment?

4 [Review 2] **More retrieval results could be presented.** Instead of showing more retrieval results, the paper contains very rough sketches of quite adventerous applications. I understand that other papers follow the same template, but the underlaying strategy is to replace quality with quantity.

【修改文字或做更多例子】

I plan to add one example for each of the applications: “Sketch-driven assembly-based modeling”, “Contour-driven shape completion”, “Shape variation”, “part suggestion”, and “Symmetry-aware selection and editing”.

5 [Review 4] **missing discussion of choice number and location of camera views needed**. This seems to be a key issue, and would seem to depend on the types of objects in the data base.

【修改文字或加实验：我不想加实验，仅修改文字可以吗？】

I think it is not necessary to discuss the choice number and location of camera views. We can simply reword the text as follows:

Follow [SXY∗11], we extract contours from 7 views: 3 canonical views (front, side, and top), 4 corner views from the top corner of its bounding cube.

6 [Review 4] There are examples of results for a user sketch, but it is not clear whether this is just a sample “user sketch” made by one of the authors. Similar to FKS04, a compelling test would be to give the user something specific to design from pieces of objects in the database.

【加实验】

Add one example: Given the concept design (a photo), the user draw sketches (tracing the contour of the object in the photo), our method retrieve 3D parts and resemble the object in the photo.

7 [Review 4] In the example applications, the ideas are interesting, but the pose of the partial shape used for computing the boundary contours appear carefully selected.

【修改文字或加实验】

I am not sure what does “the pose of the partial shape” refer to!

Does it mean the pose of the lamp in figure 10?

If so, I plan to response as follows:

如果你想搜出正确的补部件，你必需在一个最能反映它特征的视角下trace contour，否则任何一个搜索算法都都会得到很多无关的东西。

8 [Review 3] Does the proposed approach work on a different database than the one it was developed with?

【修改文字或加实验。我不想加实验。】

I develop the approach on a database including 73 shapes. The database is then extended to 513 shapes when we do experiments and generate examples.

9 [Review 1] **Why the descriptor as described in sec 5.1 is invariant to the index ordering of the contour polylines**. IE, for two contours, the descriptor only makes sense if the (i,j) indices of the matrix refer to points in comparable relative spatial locations. In other words, where does 'i' start on each polyline?

[Review 3] **Are contours sampled uniformly from directions around the unit sphere** (Section 4, third paragraph)?

【修改文字】

10 [Review 2] **The partial shape matching problem is not well specified**. It is difficult to define a metric that computes the quality of partial matches and it is already difficult to get humans to agree on what partial matches are good or not. This is a general problem, also for other methods in this area, but I feel it could have been tackled a bit better.

【修改文字】

[Review 1] Fig 12 shows a global symmetry example. **Would local symmetry/similarity matching also be possible**?

【修改文字或做个新例子】

12 [Review 4] the extreme simplicity of the partial shapes used. In a significant database an extraordinarily large number of partial geometries could match the very simple sketches used here.

【修改文字】

13 [Review 4] the very small size of the data based searched. There are obviously larger data sets available, making it seem suspicious that this doesn’t scale well.

【修改文字】

Our RCKNNG is designed to deal with the large database.