Author’s response to reviews

Title: BSCN: Bidirectional Symmetric Cascade Network for Retinal Vessel Segmentation

Authors:

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Author’s response to reviews:

Dear Dr. Mielke,

Re: Resubmission of manuscript reference No. BMIM-D-19-00227R1.

Please find attached a revised version of the manuscript entitled “BSCN: Bidirectional Symmetric Cascade Network for Retinal Vessel Segmentation”, which get great consideration for publication in the BMC Medical Imaging.

The reviews’ comments were highly insightful and enabled us to greatly improve the quality of our manuscript. We have studied comments carefully and have made some correction. In the following pages are our response for each of the comments.

Revisions in the manuscript are marked in blue in the paper. We hope that the revisions in the manuscript and our accompanying responses will be sufficient to make our manuscript suitable for publication in the BMC Medical Imaging.

Should you have any questions, please contact us without hesitate.

Yours Sincerely,

Yanjun Peng

List of Actions:

LOA1: The revised manuscript is marked in blue in the paper.
LOA2: The formula brackets on page 6 on line 25 was aligned.
LOA3: The P_1^l2h was added and clearly represented in Fig. 3.
LOA4: Data augmentation methods on STARE and HRF datasets were added to the section of experiment settings.
LOA5: The order of the results obtained by the BSCN and the Chen et al. [45] were adjusted in Fig. 17.
LOA6: The organization of the paper mentioned in the introduction have revised in order to match the actual situation.

Responses to Editor:
Thanks for the editor’s hard work. We have put the revised text of our paper in blue.

Responses to Reviewers:

Reviewer #3:

1. Formula brackets on line 31 on page 6 are misaligned.
   Response: Thanks for the reviewer’s valuable comments. We are very sorry for our incorrect writing the formula symbol. And we have aligned the formula brackets on page 6 on line 25.
   Special thanks to you for your kind advice again.

2. The role of $P_{1}^{l2h}$ in the network is described in the article, but the position of $P_{1}^{l2h}$ is not clearly identified in Fig. 3, which is likely to cause misunderstanding.
   Response: Thank you for pointing out the mistake. We are very sorry for our negligence of clearly represent $P_{1}^{l2h}$ in Fig. 3. And we have added $P_{1}^{l2h}$ to Fig. 3.
   Special thanks to you for your valuable advice again.

3. Author crop the retinal image in DRIVE and its corresponding ground truth into 50*50 patches, whether the data in other datasets have been processed the same.
   Response: Thanks for the reviewer’s good suggestions. Yes, we processed the same for other datasets. Due to the limited image of datasets, we crop the original images and ground truth in the DRIVE, STARE and HRF datasets into 50*50 patches to achieve data augmentation. In fact, Fig.6 only displays the sample patches of original image and ground truth, not shows those of other datasets.
   Considering the reviewer’s suggestion, we have added some implementation details for STARE and HRF datasets in section of experiment settings.
   Special thanks to you for your kind advice again.

4. Results of BSCN on SATRE in Fig. 17 are completely different from those in Fig. 11, results of BSCN are more like the Chen et al. [45] results, is the order wrong?
   Response: Thanks for the reviewer’s kind comments. We are very sorry for mistake the order with results of BSCN and the method proposed by Chen et al. [45] in Fig. 17. And we adjusted the order of the results obtained by the BSCN and the Chen et al. [45] in Fig. 17.
   Special thanks to you for your valuable advice again.

5. The organization of this paper mentioned in the introduction does not match the actual situation, missing discussion.
   Response: Thanks for the reviewer’s good suggestions. It is really true as reviewer suggested that the organization of the paper mentioned in the introduction should match the actual situation. So, we have re-written this part according to the reviewer’s suggestion.
   Section V discusses the advantages of our method over other methods. Section VI provides a conclusion with the future work plan.
   Special thanks to you for your valuable advice again.

   Response: Thanks for the reviewer’s good suggestions. In fact, as reviewer suggested that we have added the above reference as reference [46] to references in the first revised manuscript.
   Special thanks to you for your valuable advice again.

We tried our best to improve the manuscript and made some changes in the manuscript. These changes will not influence the content and framework of the paper.

We appreciate for Editors/Reviewers’ warm work earnestly and hope that the correction will meet with approval.