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Master's Thesis Review

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Title: Emotive Facial Expression Detection
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The thesis deals with micro-expressions. Presented method uses image intensity difference as feature within the face region. The method is tested on 3 different datasets where one of them is collected and annotated by the author. The presented algorithm is compared to one state-of-the-art method only. Comparison is in favor of the presented method. Experiments varying the components of the algorithm are performed to find out the best composition.

Introduction is well written also for people not familiar with micro-expressions. Related work is short but rich on different principles and therefore sufficient. Presented experiments require lot of work, mostly using different datasets and their annotations. Student presented the ability to understand computer vision algorithms like face rectification and described the potential limits. The evaluated experiments shows competence and understanding of systematic evaluation.

The text is written in good English language. Figures and plots are proper in quality and well described.

There are two issues bothering me in the thesis. First, author compares the result to only one method. It is not clear if the baseline method is the best in the world but either way it would give reader better understanding of the results if they were compared to more methods. For example Huang et al. [1] compare his results to 8 methods using accuracy instead of AUC. Would it be possible to compute accuracy and compare to given methods and to the newly presented method by Huang et al. [1]?

Secondly author does not provide the thoughts which lead him to the presented method. I would assume, that based on the related work author would state some hypothesis or way he thinks would be good to go. Now I mean for example the chosen feature – the image intensity difference. This would be evaluated by experiments and at the end there would be the final method. Author provides experiments after presenting the final method, which is still valuable. The missing part for me are the thoughts which lead him and which on my opinion would be valuable to reader to know. For example why moving average is used for filtering? There are so many options. What decided in favor of this filtering? Did you tried some other options which are not mentioned in the thesis?

The thesis address the assignment well and fulfills general requirements for a master thesis. Considering all above, I suggest evaluating the thesis as

B - very good

References

[1] X. Huang, S. Wang, X. Liu, G. Zhao, X. Feng, and M. Pietikäinen. Spontaneous facial micro-expression recognition using discriminative spatiotemporal local binary pattern with an improved integral projection. *CoRR*, abs/1608.02255, 2016.