

View Review

Paper ID

1

Paper Title

Deep kNN for Medical Image Classification

REVIEW QUESTIONS

1. Recommendation

Strong accept

2. Summary of the paper

Rating 9/10

This paper under review takes a novel deep learning approach called deep KNN. The paper argues that large amounts of data are limited to certain parts of diseases creating a class imbalance where modern deep learning approaches like CNN classification would not generalize well. The paper proposes an end to end strategy that unifies feature extraction and KNN classification. The paper backs its arguments by experimenting on small imbalanced class medical images showing that deep KNN outperforms both KNN and other modern deep learning classifiers.

3. Strengths

The paper is very well structured as it in its Introduction it goes over the recent literature review and talks about the goal of the paper and is clear in its motivation as to what it wishes to solve. The paper does a great job with formulating the problem and taking us through the implementation making sure that each decision that is made in the paper is backed with logic and comparison to other methods such as comparison to the 'Traditional Triplet Loss'. The paper was very extensive in its experiments as it made sure to compare with already existing state of the art models and compare the results of its model with them. All in all it was a very well written paper with well presented figures and tables to back a strong idea.

4. Shortcomings

A few weaknesses of this paper was that it assumed that most of his readers were well aware of previously existing work so he majorly rushed over other work while comparing it with his models. The paper also wasn't elaborate in its mathematical notation which could be a cause for confusion and needed more clarity in that area. Lastly, the paper was missing discussions and future work which would have given the paper some extra brownie points

5. Justification of rating

The idea of the paper was novel and the paper was very well structured as it took us through step by step through the intro, previous work, formulation, comparisons, experiments, results and finally a conclusion. Not only was the content very unique and well written the figures and tables were made very easy to understand. It was an almost complete paper which is why we rated it a 9

6. Confidence of your assessment

Moderately confident

7. How many years have been reviewing for MIUA? (or other medical imaging conferences e.g. CVPR, ICCV, MICCAI, ISBI)

Never

8. Should this paper be considered for the best paper award?

Yes
