

Paper Title: Comparing Skin Cancer Diagnosis between manual, 4 classical, and 1 deep machine learning algorithms: Automating Skin Cancer Diagnosis using Machine Learning for screening.

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1. Summary

1.1 Motivation

The paper aimed to assess and compare the effectiveness of manual diagnosis, four classical machine learning algorithms, and one deep learning algorithm in the context of skin cancer diagnosis. The motivation lies in the potential of machine learning to automate and improve the accuracy of skin cancer diagnosis, which can have significant implications for healthcare.

1.2 Contribution

This study identifies the performance differences between manual diagnosis and machine learning-based approaches for skin cancer diagnosis. It provides insights into whether deep learning algorithms offer a substantial advantage over classical machine learning methods. The paper contributes valuable information for the development of automated diagnostic tools for skin cancer.

1.3 Methodology

The study employed a comprehensive methodology involving the collection of skin lesion data, preprocessing of the data, and implementing five different algorithms for diagnosis. Four classical machine learning algorithms and one deep learning algorithm were compared, and their diagnostic accuracy was evaluated. The methodology appears to be rigorous and well-structured.

1.4 Conclusion

The results presented in the paper suggest that deep machine learning algorithms may indeed offer a substantial advantage in automating skin cancer diagnosis when compared to classical methods. This conclusion highlights the potential for improved healthcare outcomes through the use of advanced machine learning techniques in diagnosing skin cancer.

2. Limitations

2.1 First Limitation

The study's limitations include the quality and quantity of the dataset used. Skin cancer diagnosis requires a vast and diverse dataset, and the paper does not explicitly address the representativeness of the dataset used.

2.2 Second Limitation

The paper focuses on the comparison of a single deep learning algorithm with four classical machine learning algorithms. A more extensive comparison involving a variety of deep learning architectures might have provided a more comprehensive view of the advantages and disadvantages of different machine learning techniques.

3. Synthesis

The paper underlines the significance of leveraging machine learning in the field of skin cancer diagnosis. Given the limitations mentioned, further research is required to address the generalizability of the results. However, this study lays the groundwork for the development of automated diagnostic tools that have the potential to improve the accuracy and accessibility of skin cancer diagnosis, ultimately benefiting both patients and healthcare providers. It also highlights the ongoing importance of refining and expanding machine learning applications in healthcare, with skin cancer diagnosis being just one of many areas where these techniques can make a substantial impact.