# Article information:

Life | Free Full-Text | Skin Lesion Analysis and Cancer Detection Based on Machine/Deep Learning Techniques: A Comprehensive Survey  
<https://www.mdpi.com/2075-1729/13/1/146>

# Article summary:

1. Skin cancer is a dangerous type of cancer that requires early diagnosis for effective treatment.

2. Machine learning and computer vision approaches have been merged to develop computer-aided diagnosis systems for skin cancer recognition.

3. Preprocessing, segmentation, feature extraction, selection, and classification approaches are utilized in skin lesion analysis for cancer detection. Challenges still exist due to complex and rare features.

# Article rating:

Appears moderately imbalanced: The article provides some useful information, but is missing several important points or pieces of evidence that would be required to present the discussed topics in a balanced and reliable way. You are encouraged to seek a more balanced perspective on the presented issues by exploring the provided research topics and looking at different information sources.

# Article analysis:

The article provides a comprehensive survey of the various machine learning and deep learning techniques used for skin lesion analysis and cancer detection. The authors have covered different phases of the computer-aided diagnostic system, including preprocessing, segmentation, feature extraction, selection, and classification approaches. They have also discussed the challenges faced in skin lesion analysis due to complex and rare features.

The article is well-researched and provides a detailed overview of the topic. However, there are some potential biases that need to be considered. Firstly, the authors have not discussed the limitations of using machine learning and deep learning techniques for skin lesion analysis. While these techniques have shown promising results, they are not foolproof and can still produce false positives or false negatives. Additionally, these techniques require large amounts of data for training, which may not always be available.

Secondly, the article does not discuss the potential risks associated with relying solely on machine learning and deep learning techniques for skin lesion analysis. It is important to note that these techniques should be used as an aid to clinical diagnosis rather than a replacement for it.

Lastly, while the authors have provided a comprehensive overview of different approaches used for skin lesion analysis, they have not explored counterarguments or alternative approaches that may exist. This could potentially lead to one-sided reporting.

Overall, while the article provides valuable insights into skin lesion analysis and cancer detection using machine learning and deep learning techniques, it is important to consider its potential biases and limitations before drawing any conclusions or making decisions based solely on this information.

# Topics for further research:

* Limitations of machine learning and deep learning techniques for skin lesion analysis
* Risks associated with relying solely on machine learning for skin cancer detection
* Comparison of machine learning and deep learning techniques with traditional diagnostic methods for skin cancer
* Ethical considerations in using machine learning for skin lesion analysis
* Importance of human expertise in skin cancer diagnosis alongside machine learning techniques
* Future directions in skin lesion analysis research beyond machine learning and deep learning techniques.

# Report location:

<https://www.fullpicture.app/item/21b5fa5cb62b06575c3af9184858decb>