Classification of Skin Melanoma using ANN

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Abstract

Cancer is one of the most deadly types of disease in the present era and skin cancer is one of them, an early detection of skin cancer can save many lives. Skin cancer occurs on the melanocytic cells of skin, so skin cancer is also known as malignant melanoma. It causes abnormal growth of melanocytic cells which produces sun protective pigment melanin. Due to melanin, melanoma appears as black or brown colour. For the detection of melanoma, conventional method is Biopsy. It is done by removing the skin sample and sample goes through a series of laboratory test. It is a time consuming process. It is more advantageous if computer based melanoma detection is used. This computer based detection contains imaging and artificial intelligence technique. In this paper we present novel approach for the detection of melanoma. This detection can be done with different steps- Dermatoscopy, Processing of image, Segmentation of region of interest, Feature extraction using Gray Level Co-occurrence Matrix (GLCM). These features are used for classification of cancerous and non-cancerous melanoma using Back-Propagation Artificial Neural Network (ANN).
References

2. Ho Tak Lau and Adel Al-Jumaily, "Automatically Early Detection of Skin Cancer: Study
Based on Neural Network Classification", International Conference of Soft Computing and
3. Fikret Ercal, Anurag Chawla, William V. Stoecker, Hsi-Chieh Lee, and Randy H.Moss,
"Neural Network Diagnosis of Malignant Melanoma From Color Images", IEEE Transactions on
Biomedical Engineering, vol. 41, No. 9,1994
4. National Cancer Institute, What You Need to Know About Dysplastic Nevi, NIH
and Level set Method Applied to Detect Oil Spills" Proceedings of the World Congress on
8. V. Caselles, R. Kimmel, G. Sapiro, “Geodesic active contours”. International Journal of
9. R. T. Whitaker, “A level-set approach to 3d reconstruction from range data”. International
11. Kevin Woods, Kevin W. Bowyer “Generating ROC Curves for Artificial Neural Networks”.
12. Bino Sebastian, A. Unnikrishnan and Kannan Balakrishnan, "Grey Level Co-occurrence
Matrices: generalisation and some new features". International Journal of Computer Science,
13. D. Baswaraj, Dr. A. Govardhan and Dr. P.Premchand."Active Contours and Image
Segmentation: The Current State of the age”. Global Journal of Computer Science and
14. American cancer society, “Cancer Facts and Figure 2015”.

Index Terms

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Keywords

Melanoma, Dermatoscopy, Segmentation, Gray Level Co-occurrence Matrix, Artificial Neural Network