Skin disease diagnosis system using image processing and data mining

Abstract

Skin diseases are most common form of infections occurring in people of all ages. As the costs of dermatologists to monitor every patient is very high, there is a need for a computerized system to evaluate patient’s risk of skin disease using images of their skin lesions. We will be constructing a diagnosis system based on the techniques of image processing and data mining. The procedure would be of great advantage to the dermatologists as a pre-screening system for early diagnosis in situations where the dermoscopes are not accessible. The proposed system will capture image through smart-phone camera. Preprocessing and segmentation will be performed on each image. Then feature extraction is done on skin lesion feature extraction is very important for Predictive modeling applications. Feature extraction in image processing is a method of capturing visual content of images for indexing and retrieval. Primitive image features can be either General features, such as extraction of color, texture and shape or Domain specific features. After feature extraction, feature classification can be done. In Feature Extraction, the system will compare the captured image with training dataset using image
processing techniques and decides whether a skin suffers from diseases or not using decision tree. If there is disease, then the system will give medical advice through Android application.

References

1. Jyothilakshmi K. K, Jeeva J. B, “Detection of Malignant Skin Diseases Based on the Lesion Segmentation”, International Conference on Communication and Signal Processing, April 3-5, 2014, India
2. Er. Shrinidhi Gindhi, Ansari Nausheen, Ansari Zoya, Shaikh Ruhin, “An Innovative Approach for Skin Disease Detection Using Image Processing and Data Mining”, International Journal of Innovative Research in Computer and Communication Engineering, Vol. 5, Issue 4, April 2017
3. A.A.L.C. Amarathunga, E.P.W.C. Ellawala, G.N. Abeysekara, C. R. J. Amalraj, “Expert System for Diagnosis of Skin Diseases”, INTERNATIONAL JOURNAL OF SCIENTIFIC & TECHNOLOGY RESEARCH VOLUME 4, ISSUE 01, JANUARY 2015
4. Seema Kolkur, D.R. Kalbande, “Survey of Texture Based Feature Extraction for Skin Disease Detection”, IEEE, 2016.
5. Teck Yan Tan, Li Zhang, Ming Jiang, “An Intelligent Decision Support System for Skin Cancer Detection from Dermoscopic Images”, 2016 12th International Conference on Natural Computation, Fuzzy Systems and Knowledge Discovery (ICNC-FSKD)
6. Uzma Jamil, Shehzad Khalid, “Valuable Pre-processing & Segmentation Techniques Used in Automated Skin Lesion Detection Systems”, 2015 17th UKSIM-AMSS International Conference on Modelling and Simulation.
7. A.A.L.C. Amarathunga, E.P.W.C. Ellawala, G.N. Abeysekara, C. R. J. Amalraj, “Expert System for Diagnosis of Skin Diseases”, INTERNATIONAL JOURNAL OF SCIENTIFIC & TECHNOLOGY RESEARCH VOLUME 4, ISSUE 01, JANUARY 2015.

Index Terms

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Keywords

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