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Classification and Precaution of Skin Diseases Using Image Acquisition with SVM Algorithm.

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Abstract:

Wheezing is a common clinical symptom in patients with obstructive pulmonary diseases such as asthma. Automatic wheezing detection offers an objective and accurate means for identifying wheezing lung sounds, helping physicians in the diagnosis, long-term auscultation, and analysis of a patient with obstructive pulmonary disease. This paper describes the design of a fast and high-performance wheeze recognition system. A wheezing detection algorithm based on the order truncate average method and a back-propagation neural network (BPNN) is proposed. Some features are extracted from processed spectra to train a BPNN, and subsequently, test samples are analyzed by the trained BPNN to determine whether they are wheezing sounds. The Skin sounds of 58 volunteers (32 asthmatic and 26 healthy adults) were recorded for training and testing. Experimental results of a qualitative analysis of wheeze recognition showed a high sensitivity of 0.946 and a high specificity of 1.0.

Keywords ──**skin diseases,Precauitions, svm algorthims,deep learning CNN ,support vector machine,**

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I. INTRODUCTION

Skin cancer is common now a day.The statistics of American Cancer Society, Inc, Surveillance Research in 2020 estimated new Melanoma skin cancer cases are 100,350 among 60,350 are male cases and 43,070 are female cases [1]. The estimated death rate of Skin cancer is 6,850 among 8,030 are male and 3,450 are female, it will increase almost by 2 percent [1]. Generally, three types of skin cancer are (1). Basal Cell Carcinoma (BCC): It grows from the bottom of the epidermis in the long term exposure area to sunlight. The growth rate of skin cancer is slow, so diagnosis is very easy. Basal Cell Carcinoma can visualize as tiny, shiny, smooth, waxy or pale lump, red with rough, dry, or scaly patches. (2). Squamous Cell Carcinoma (SCC): It is another type of skin cancer. It develops at the outer layer of the skin like Basal Cell Carcinoma. It spread to the other skin areas at its early stage. It is the mainDifference between BCC

and SCC. Squamous Cell Carcinoma can visualize as tiny, smooth, small lumps with real or brown. (3). Malignant Melanoma (MM): It is the third type and dangerous skin cancer disease. It happens in the melanocytes. Melanoma skin cancer visually as asymmetry in shape with irregular borders and unnatural in color [2].

MOTIVATION

Proposed (CNN) system which combines Convolutional Neural Network with Support Vector Machine classifier to develop a Application. An application for Intelligent System for Skin Disease Prediction using Machine Learning Thus, to evaluate the performance of the proposed system several experiments are conducted on our dataset

EXISTING WORK

Many studies have applied deep learning algorithms in classification of skin diseases. Daily soft drink consumption significantly increases the risk of moderate-to-severe acne in adolescents,especially when the sugar intake from any type of soft drink exceeds 100 g per day. Rosacea is one of the common chronic facial disorder that affects the patients health. The adjusted Chinese-version RosQol was easy to complete, well received by patients, and demonstrated acceptable validity and reliability. The results indicate that leptin plays a critical role in the development of autoimmune disorders and demonstrate that the transgenic leptin pigs will be act as a valuable model of SLE. Certain results argue strongly to include skin disease prevention and treatment in future global health strategies as a matter of urgency. The results in ''Symptoms of systemic lupus erythematosus are diagnosed in leptin transgenic pigs,'' indicate that leptin plays a critical role in the development of autoimmune disorders and demonstrate that our transgenic leptin pigs can act as a valuable model of SLE.

2.1. RELATED WORK

2.1 Skin sound analysis for diagnostic information

Authors: Rutuja Mhetre and U.R.Bagal

Abstract:

The most important concern in the medical domain is to consider the interpretation of data and perform accurate diagnosis.The bronchitis, pneumonia and many other pulmonary diseases causes Skin disorders which affects Skin systems. Diagnosis of these diseases is facilitated by pulmonary auscultation by using stethoscope. This method depends on individuals hearing capability, experience and ability to differentiate the sounds. The quantitative measurement and permanent record of the related parameters is difficult. The recording and analysis of the Skin sounds may quantify the changes in abnormal Skin sounds in Skin disorder. The signal processing techniques may be used for diagnostic information.

PROPOSED WORK

A neural network is a type of machine learning algorithm allows the computer to learn by incorporating new data. CNNs is very useful in image recognition in order to analyze visual imagery and are frequently used in classifying the images. It takes the given three classes of skin disease images asinputand it gives the output of aprobabilitythat the input belongs to a particular class.CNN is now the go-to model on every image related problem. The main advantage of CNN compared to its predecessors is that it automatically detects the important features without any human superintendence.

Research Method

Skin is the largest and fastest growing organ of the body.In this contemporary world, skin diseases are mostly found in humans. A skin disease is a particular kind of illness caused by bacteria or an infection. These diseases like psoriasis have various dangerous effects on the skin and keep on spreading over time.It becomes important to identify these diseases at their initial stage to control it from spreading. Since there are large number of different skin diseases, manually identifying them can be a difficult task. Derma disease detection and classification can help in early identification of disease ,prevent it from becoming chronic.we are collect 5 images it contains img1-actinic keratosis, img2-dermatofibroma, img3-melanoma, img4-seborrheic keratosis, img5-squamous cell carcinoma The following Derma Diseases are identified by our virtual doctor:

Melanoma

Actinic Keratosis

Dermatofibroma

Seborrheic Keratosis

Squamous Cell Carcinoma

Upload an image using upload button
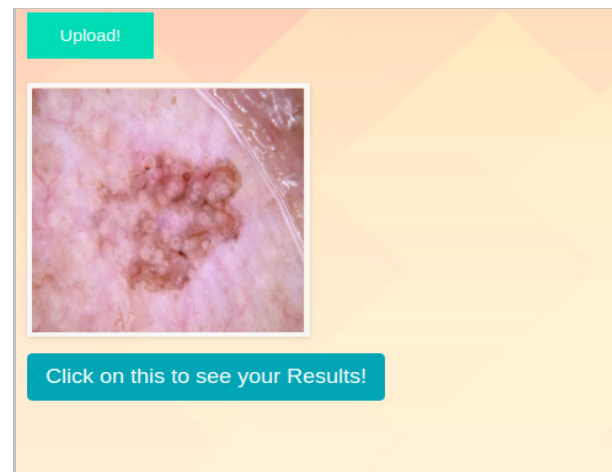
Click for results
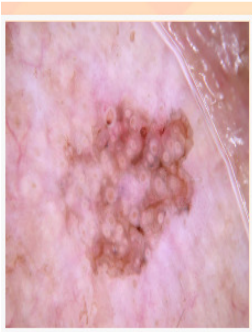
Result: The predicted Disease is Actinic Keratosis - Must undergo Cryotherapy.

CONCLUSIONS

Early detection of melanoma skin cancer accelerates the time of dermatologists and improves diagnosis performance. This paper is mainly focused on the current and traditional technologies of melanoma skin cancer detection in an early stage. From the study of literature, it is concluded that various methods are employed for detecting melanoma skin cancer are image pre-processing, post-processing, image segmentation, Feature extraction, and classification algorithms

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