1. Traditional Techniques for Skin Disease Image Classification:

Authors : Tanvi Goswami; Vipul K. Dabhi; Harshadkumar B. Prajapati.

Year:2018

They developed an expert system limited to three disease classifications. The system consists of two independent units. Data processing and image processing unit. The data processing unit was responsible for image acquisition, preprocessing for noise removal, segmentation, and feature extraction from skin disease images, while the data processing unit was used for data mining tasks or classification. They proposed a hybrid model to diagnose benign or malignant skin lesions using multi-objective optimization algorithms NSGA-II and ANN. Classify skin lesions using a bag-of-features approach and generate using SIFT. The SIFT algorithm identifies and locates key points from the input image and generates a feature vector. These features are fed into a hybrid classifier, which trains an ANN using NSGA-II. The author also used ANN-PSO (his ANN trained with particle swarm optimization) and his ANN-CS to compare the accuracy of the models.

2.Effective diagnosis mechanism for skin disorders using image mining techniques

Authors: Galiveeti Poornima, Dr. Deepak S Sakkari

Year:2022

The first stage of the model requires dataset compilation and data enrichment. The dataset was created entirely by collecting photographs from different locations with different diseases. The original data set consisted of 30 images and was expanded to 150 images. The second stage of the model uses various image processing techniques to extract features from images of skin disease. The third stage of the model classifies the skin disease images.

3. Deep learning based approach for Skin Disease Image Classification

Authors: Zhang, Sun et al, Gessert .

Year:2020

They used a three-way disease distribution algorithm designed to classify specific skin lesions as malignant, benign, or non-neoplastic. In addition, 9-way disease classification was performed to classify a given lesion into one of the 9 aforementioned categories. A state-of-the-art CNN

architecture, InceptionV3, was used for skin lesion classification, and it was concluded that when trained on sufficient data, the CNN could outperform human experts. They proposed handcrafted feature-based and CNN-based approaches for classifying clinical images. They trained CNN architectures. Caffenet, Fine-tuned Caffenet, VGG, Fine-tuned VGG Net. They proposed a CNN architecture by specifying 16 different filters with a kernel size of 7x7 with pooling layers for downsampling. That is, the proposed model was trained for malignant and benign disease categories. melanoma, seborrheic keratosis and nevus

4.Skin Disease Detection And Classification

Authors: V. Pugazhenthi, Sagar K. Naik, Amruta D. Joshi, Shreya S. Manerkar, Vinita U. Nagvekar, Kalpita P. Naik, Chinmay G. Palekar, K Sagar

Year:2019

GLCM (Grey Level Co-occurrence Matrix) This method analyzes the texture of the image. image quality evaluation. The image quality evaluation functions MSE (Mean Square Error) and PSNR (Peak Signal to Noise Ratio) are extracted from the segmented images. Full reference method This metric is the mean squared error (MSE) calculated by averaging the squares of the intensity differences of the pixels in the distortion and reference image pixels, together with the associated signal-to-noise ratio (PSNR) magnitude. will be Classification is the process of identifying which category the input data belongs to. Decision tree, ID3 algorithm is the classification method used here.

5.Skin Disease prediction

Authors: Mr. T.K.Jagtap,Mr. H.P.Shinde,Mr. O.V.Gaware,Mr. S.R.Maurya

Year:2021

Their implementation is mobile-based, it is highly accessible even in remote areas and completely non-invasive to the patient's skin. Image processing techniques are performed on the image and the detected diseases are displayed at the exit. Convolutional Neural Networks (CNN/Conv Nets) are a class of deep neural networks most commonly used for analyzing visual images. TensorFlow is a symbolic math library that uses data flow and differentiable programming to perform a variety of tasks focused on training and inferring deep neural networks. Deep

learning algorithms take longer to train because they use very large datasets. Deep learning algorithms, unlike machine learning, choose their own features. This makes the prediction process easier for the end user, as less preprocessing is required.

6.Skin Lesion Segmentation Based on Deep Learning

Authors: Cheng Huang,Yongbin Yu

Year:2020

The authors implemented deep learning, Mask R-CNN to segment skin diseases, and introduced K-means clustering algorithm for preprocessing the dataset. Experimental results are based on the ISIC (International Skin Imaging Collaboration) dataset. Anticipate the presence of blurry borders and complex textures. There are many skin disease segmentation algorithms based on deep learning such as convolutional neural networks (CNN) and many derivatives based on convolutional neural networks such as superpixel segmentation and U-Net segmentation algorithms. If you use Faster R-CNN to treat skin diseases, you will get a new idea of using R-CNN series neural networks to treat skin diseases. In deep learning, the R-CNN series of neural network models perform well in region detection and determination. Among them, the instance segmentation effect of Mask R-CNN is attractive.

7. Skin Disease Classification System Based on Machine Learning Technique

Authors: Saja Salim mohammed ,Jamal Mustafa Al-Tuwaijari

Year:2020

They used machine learning and deep learning algorithms to implement data extraction techniques from medical systems to help design automated disease diagnostic tools. The authors used several types of artificial intelligence algorithms to train the classifiers needed to perform machine diagnostics using machine learning and deep learning principles. The close relationship between artificial intelligence, machine learning and deep learning is also an ongoing progressive process.

8. A Smartphone-Based Skin Disease Classification Using MobileNet CNN

Authors: Jessica Velasco, Cherry Pascion, Jean Wilmar Alberio

Year:2019

The authors aim to develop a skin disease classifier application on Android phones that classifies various skin diseases using pre-trained convolutional neural network models that perform best in this area of the dataset. increase. Images collected from public online dermatology repositories have been validated by dermatologists. The proponent chose a pre-trained CNN MobileNet model. To properly deploy the CNN model in your Android application, you need to convert the .h5 file to a protobuff file.

9.AI recognition in skin pathologies detection

Authors: Dmitriy Gavrilov, Lyubov Lazarenko, Emil Zakirov

Year:2020

Cutaneous malignancies begin in the epidermis, or top layer of skin. There are three main types of cells in this layer: squamous cells, basal cells, and melanocytes. For early detection of skin cancer, it is usually recommended to focus on ABCDE criteria, including features such as asymmetry, uneven borders, odd and irregular colors, diameter greater than 6 mm, and timely assessment. Other features can also be used to distinguish between malignant and benign tumors from pathological images. Using computer vision to detect skin diseases is not a completely new concept. For tasks such as object recognition and natural image classification, convolutional neural networks (CNNs) outperform alternative approaches. Known CNN architectures are often trained on huge image datasets to achieve high accuracy.

10. A Survey Skin Disease Classification from Image

Authors: Tanvi Goswami, Vipul K. Dabhi, Harshadkumar B. Prajapati

Year:2020

Diagnosing skin diseases from imaging is a challenging task due to the wide variety of skin diseases. the following questions have been raised by researchers when classifying skin diseases: different types of lesions can occur in the disease. dermatologists can have difficulty diagnosing diseases by visual examination because many diseases share similar visual features such as skin tone , skin type, age etc. which complicates computer-aided diagnosis. Therefore, in computer-aided diagnosis, it is important to select features relevant to such diseases in order to properly identify them. The effectiveness of an automated system depends on how well it handles the required image processing and machine learning tasks. Recent technological advances are generating massive amounts of medical data every day, which contain important and valuable information about patients. Image-based artificial intelligence is gaining popularity for treating some ailments, especially skin diseases.