

COMPETENT TRAINING OF MALNOURISHMENT WITH MACHINE LEARNING USING CNN PROCESS

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ABSTRACT

Malnutrition: A stretch used to refer to any condition in which the body does not obtain enough nutrients for proper function in this system Image processing is a technique to convert an image into digital form and perform some action on it, in order to get an enhanced image or to citation some useful information from it. There are some types of image that is Tagged Image Format, Joint Photographic Group, Graphic Interchange Format, Portable Network Graphics, Row Image File. Computer can easily classify more than 16 million colors; where the eye capability has limitation while identifying color and also some people face the problem such as color carelessness. So the execution nail color Analysis through computer is a higher procedure as compared with human eyes. Human eyes have limited resolution, finding deviation in nearby pixel intensity is not possible for human eyes, but computer vision can detect every pixel appropriately. In this system very helpful for the patient, to find out the diseases without doctor.

KEYWORDS: Malnutrition, Analysis, Investigation.

I. INTRODUCTION

Malnutrition is the condition that results from taking an unbalanced diet in which certain nutrients are lacking, in excess (too high an intake), or in the wrong proportions Malnutrition is used to describe any imbalance in nutrition, from over-nutrition to under-nutrition. It can develop as a consequence of deficiency in dietary intake, increased requirements associated with a disease state, from complications of an underlying illness such as poor absorption and excessive nutrient losses, or from a combination of these factors.

In this system it will extract color article of humanoid nail image for disease prediction & The system is converging on image recognition on the basis of human nail color investigation & identified by analyzing nails of human hand. this system human nail image is captured using camera & Captured image is uploaded in our system and region of interest from nail area is selected from uploaded image manually. The selected area is then processed further for extracting features of nail such as color of nail .This color feature of nail is matched using simple training data set for disease prediction .In this way the system is useful in prediction of first stage

II. METHODOLOGY

The system which is shown in below gives the disease diagnosis system by human nail using image processing. Machine learning is a heart of early stage diagnosis system. The block diagram of system give whole idea of system. In this system we are getting the result with the help of GUI (Graphical User Interface) only for GUI system code is necessary to implement it.

Image is captured by digital camera or mobile .This image is considered as input image this image is in any format like jpeg .For processing first we have to crop that image in proper block to extract it's features. Then by extracting it's features find out it's RGB value that is Red, Green & Blue plane value with the help of GUI we are creating the buttons are as follows :

- A. Select Image
- B. Calculating Parameter
- C. Classify

D. Exit

Under this four buttons we are getting our result. In first button we are taking capture the image which is to be cropped in proper manner. Then under this button we are going to write correct code to run this button and show the input Image.

Then for comparison purpose we have to first calculate the parameters. There are twelve calculating parameters with the help of this we can compare properly. Then next we are collecting data of various patient and also healthy person then give proper limitation to that disease. Then finally compare our train data set with our input image parameters then under classify Button we get the percentage of this image to match the limitation of proper patients diseases. Then under this classify button write proper code to get proper result and show the proper disease which that person has. Then under exit button also write code to exit this process and finish it.

III. MODELING AND ANALYSIS

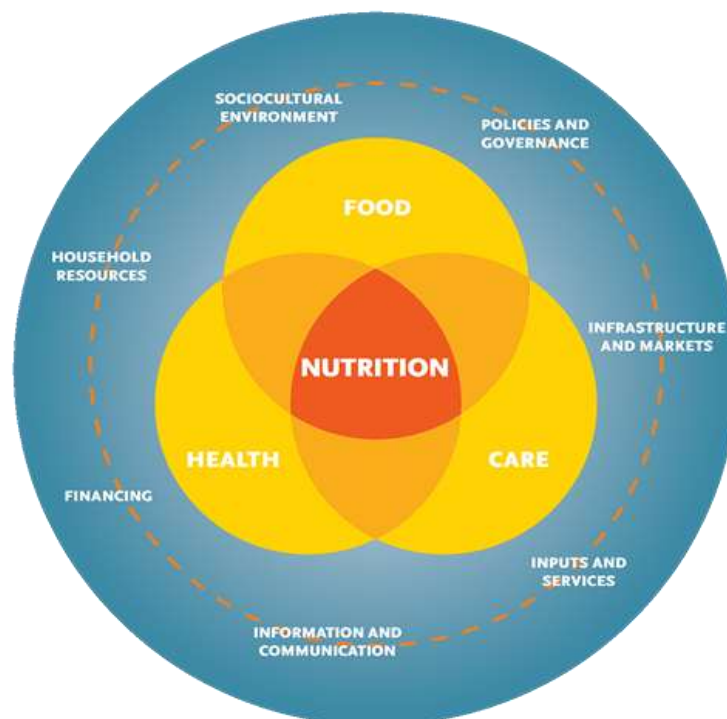


Fig-1: Overall process of Nutrition.

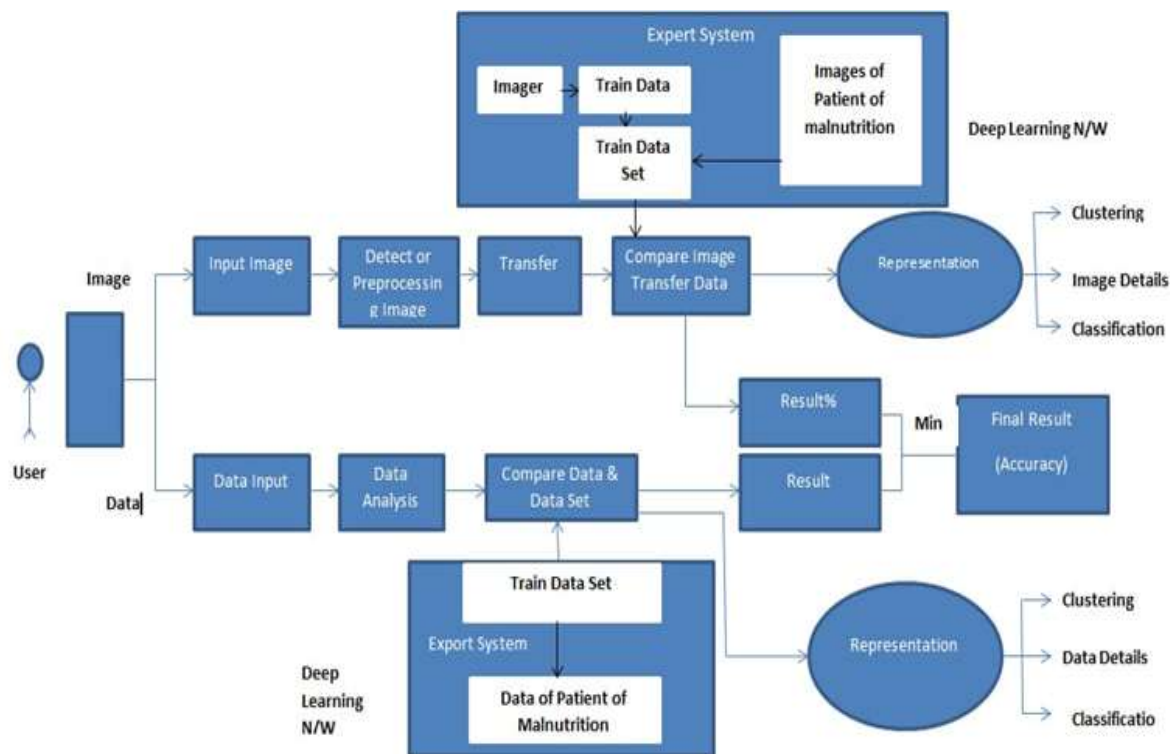


Fig-2: Research Design of process.

1.1 Include criteria:

- Minimum outcomes: Patient diseases calculate and malnutrition
- Appropriate measures of Framingham variables (Age, name, weight, any problem, diabetes, smoking status, and hypertension)

1.2 Exclude criteria:

- No data available
- Population or sub-population with known coronary disease (e.g., diabetes)
- Does not include minimum outcomes
- Doesn't measure Framingham variables fittingly
- Erroneous study design/article arrangement

1.3 Different types of Risks

The purpose of an economic feasibility study (EFS) is to demonstrate the net benefit of a proposed project for accepting or disbursing electronic funds/benefits, taking into consideration the benefits and costs to the agency, other state agencies, and the general public as a whole. This system is benefit to all company, organization, government to minimizing malnutrition percentage.

Performance Feasibility Study is an assessment of the practicality of a proposed project or system. This system is give the better graphical displays and calculates measures of performance. Proposed system performance is better than other, during detecting the exactly patient dieses for better performance.

Social feasibility is one of the feasibility studies where the acceptance of the people is considered regarding the product to be launched, this product once developed then we use the social use to the any company, organization, hospital, government etc. for protecting the different dieses to the any child.

1.4 Data Collection:

Data collection is defined as the ongoing systematic collection, analysis, and interpretation of health data necessary for designing, implementing, and evaluating public health prevention programs.

Data collection in healthcare allows health systems to create holistic views of patients, personalize treatments, advance treatment methods, improve communication between doctors and patients, and enhance health outcomes.

IV. RESULTS AND DISCUSSION

Execution process of Convolutional Neural Network Tutorial (CNN):

Step 1 : Convolution Operation

Mainly three origins that enter into the sophistication operation:

- Input image
- Feature detector
- Feature map

Step 2: ReLU Layer

The reason we want to do that is that images are naturally non-linear.

Rectified Linear Unit (ReLU) transform function only initiates a node if the input is above a certain quantity, while the input is below zero, the output is zero, but when the input grows above a certain threshold, it has a linear association with the dependent variable.

Example:

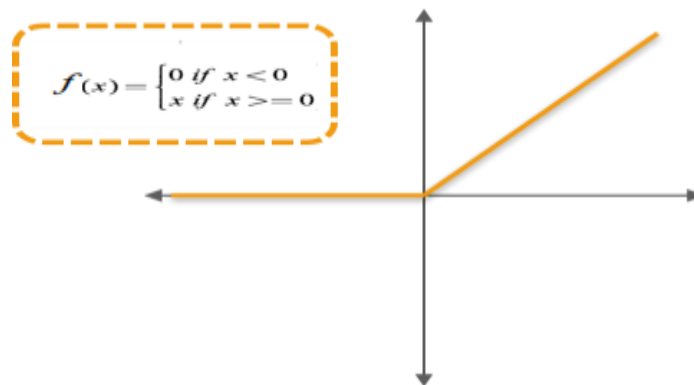


Fig-3

We have reflected a simple function with the ideals as mentioned above. So the function only completes an operation if that assessment is obtained by the reliant variable. The purpose is to eliminate all the negative values from the complication & All the positive ideals remain the same but all the negative ideals get changed to zero as exposed below:

Step 2: Pooling

In this step it concerned with teaching your convolutional neural network to recognize that despite all of these differences that we mentioned, they are all pictures are identical. In direction to do that, the network needs to acquire a property that is known as "spatial variance."

Consider the image below:

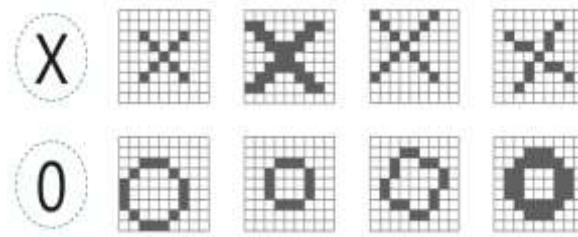


Fig-4

Here, there are multiple executions of X and O's. The input indication. The resulting output indication is then passed on to the next sheet. So, the computer understands every pixel. In this instance, the white pixels are - 1 where the black are 1. This is the way we have fulfilled to segregate the pixels in a basic binary organization. Now we normally search and compare the values between a normal image and another 'x' rendition, we receive a slice of missing pixels.

Step 3: Flattening

In flattening process data move from combined to compressed layers when working with Convolutional Neural Networks.

Step 4: Pooling

After the flattening step long vector of input data is end & pass through the non-natural neural network to have it processed further of pooling.

Step 5: Full Connection

In this step all that we trained during how the Convolutional Neural Networks operate and how the "neurons" that are lastly produced to classification of pictures.

Step 6: Summary

In the last step , it resolve wrap all and give a quick repetition of the concept covered in the drill.

Step 7: SoftMax& Cross-Entropy

Optimization Functions for CNN model. To calculate final accuracy and losses

V. CONCLUSION

In this organization, it analyzes the humanoid nail and gives possible disease for person including strong case. Here, for sickness prediction nail color (average Red, Green, Blue) value used as a nail feature. This model gives more accurate results than humanoid eye like subjectivity and resolution power. This may give more accurate result for identifying human health condition using machine learning algorithm.

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