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Advances in Bioresearch

SHORT COMMUNICATION

Identification of Normal and Abnormal Retina Images using Transforms

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ABSTRACT
One of the most powerful and dangerous disease is human blindness in order to give social responsibility and contribution to those disease this system mainly focus on differentiate between normal and abnormal disease and to identify in the earlier stage to give treatment by using an open database. The system mainly focus on database collection from the open database and extract the feature for normal and abnormal images and using proposed algorithm enhance the thickness of the edge and kept as database. Again follow the same thing for the comparison for the normal and abnormal of images using feature extraction like edge and proposed algorithm namely thickness enhancement from the extracted image and finally make the matching with the database to give efficient result. To make effective result comparison Tp, Tn, Fp, Fn will be taken into account for the justification of the result.
Keywords; *Edge, Retina, Feature Extraction, Abnormal retina*

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INTRODUCTION

All over the world blindness is the major problem to give support to this disease along with present technology this system fully focus on the earlier detection of retina diseases to avoid blindness in universe. To make this possible this system deals with open database for both normal and abnormal images of retina in this entire system. There are two stages namely Stage1 and Stage2, The Stage1 will be database creation from the available retina database and another stage will be Stage2 for the detection of normal and abnormal images simple classification techniques are used for this to achieve the result[1].

The Figure2 show the retina database used in this system and stage1 mainly focus on database creation from the retina database for that feature extraction takes a major role for the entire system and to make the system smooth and transparent and stage2 is focus on the matching with database created for that entire process will be proceed once again for the same. To make the feature extraction more efficient this system also process the edge enhancement technique namely dilation which is used to make the edge detection more sharper, accurate and this will help for the earlier detection process and make the system still more powerful compare to the existing system[2].

The Figure1 shows the entire workflow nature as flowchart and for the result comparison and result justification True positive, True Negative, False Positive, False Negative will be taken into the account for the entire process. This system has two stages and all the two stages will be created and executed using openCV(pycharm). For the classification purpose Support vector machine along with KNN classifier is used for the stage2 process in efficient manner as per existing system result justifications are available.

The result justify from the result part is very good and recommended for the retina disease detection is very important and This problem solution is mandatory for the present scenario of this particular problem and give support to all aspects in this kind of sector[3].

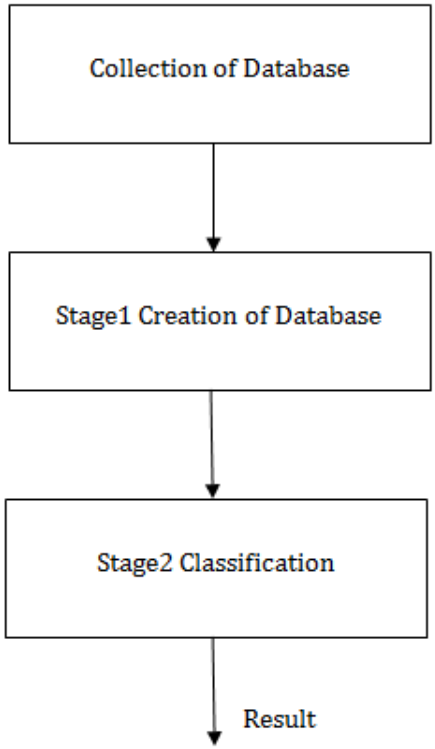

Figure1 System Flow

MATERIAL AND METHODS

To overcome the eye blindness earlier detection of disease is the major part of solution to the problem and to give more support this system used open database and it has been shown in the Figure2 and normal image will be processed and it will be converted into gray scale image then the system will extract the feature like edge and then using dilation techniques lines in the edge detection will be more sharp and more accurate to make accurate result for the classification of normal and abnormal of the images[4][1].

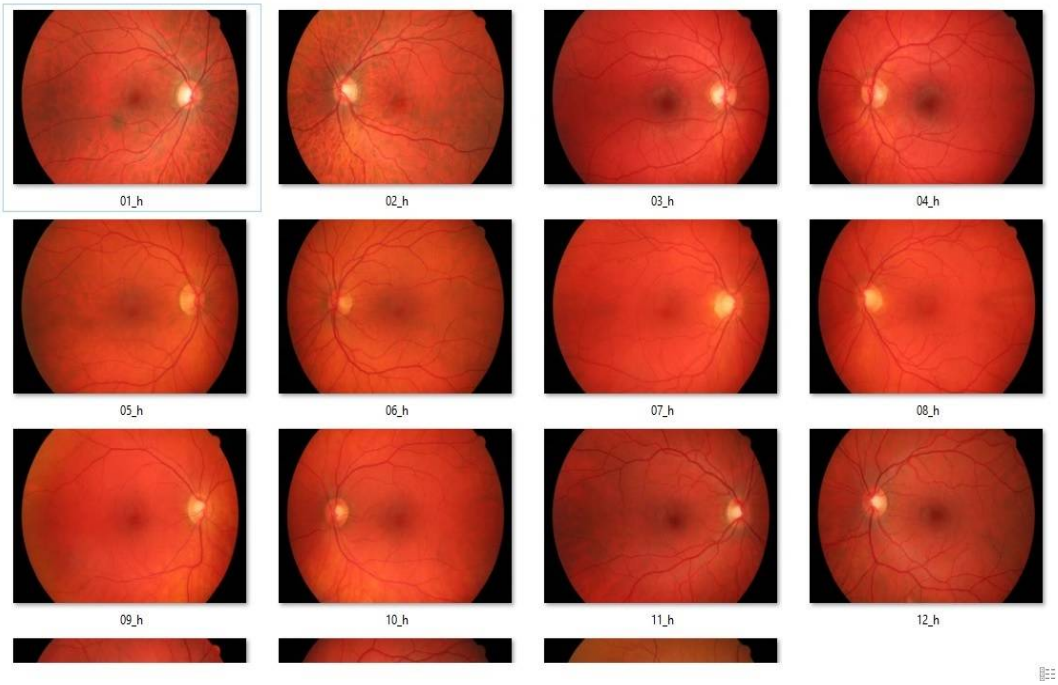

Figure2 Retina Database

RESULTS AND DISCUSSION

This System mainly focuses on blindness of human being and the stage1 will created the database for that image will be converted into grayscale and it will be extracted feature that is edge and that edge will be enhanced so that accuracy will be more and shown in the Figure3, Figure4, Figure5, figure6[5-8].

Figure3 Retina Color Image

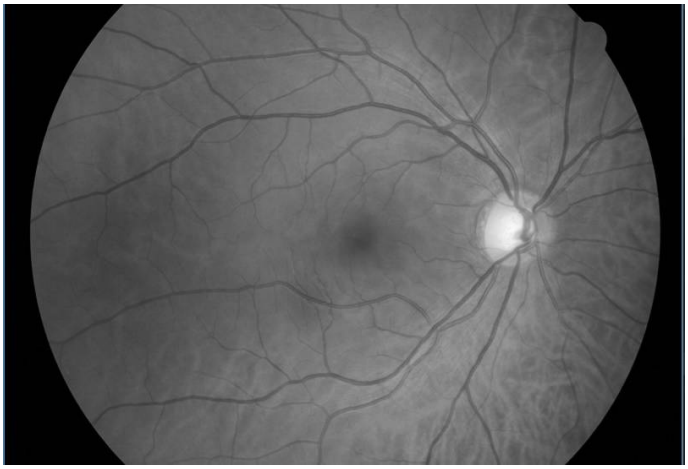

Figure4 Retina Gray Scale Image

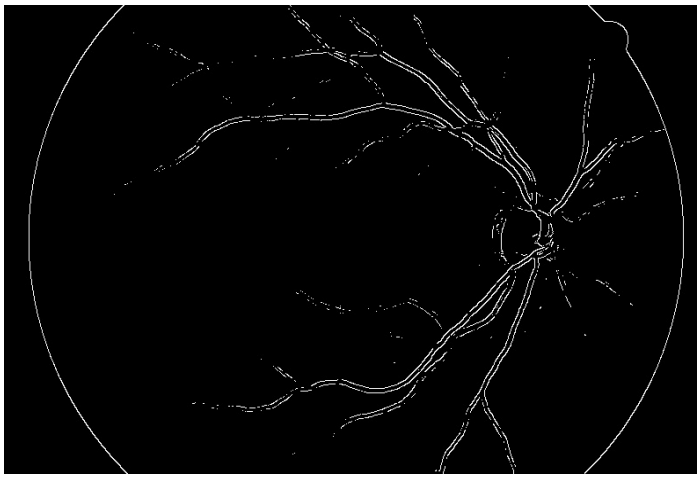

Figure5 Edge Detection Image

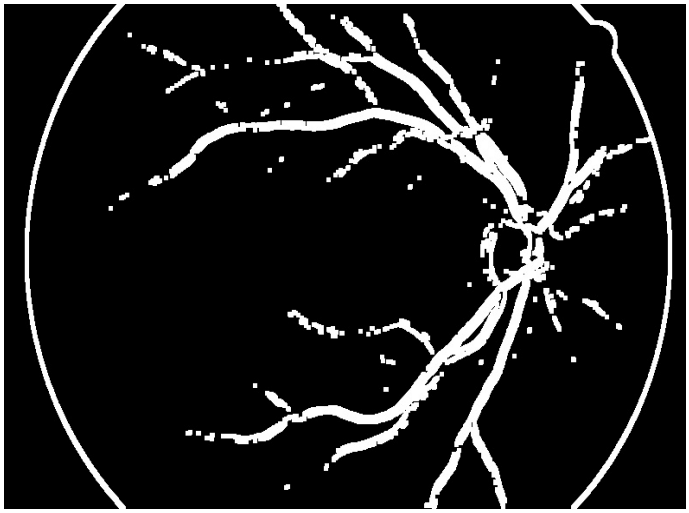

Figure6 Edge Enhanced Image

The Stage2 is used for the classification techniques for that this deals make comparison with Fourier Transform, Support Vector machine and Haar Transform along with True positive, True Negative, False Positive and False Negative from the result justify the SVM is better transform to identify or classification purpose for the retina images for the earlier detection method[1].

Table1: Comparison among the Transform

S.No	Content	Fourier Transform	Support Vector Machine	Haar Transform
1	True Positive	96.67	100	100
2	True Negative	100	100	100
3	False Positive	100	96.67	96.67
4	False Negative	96.67	100	96.67

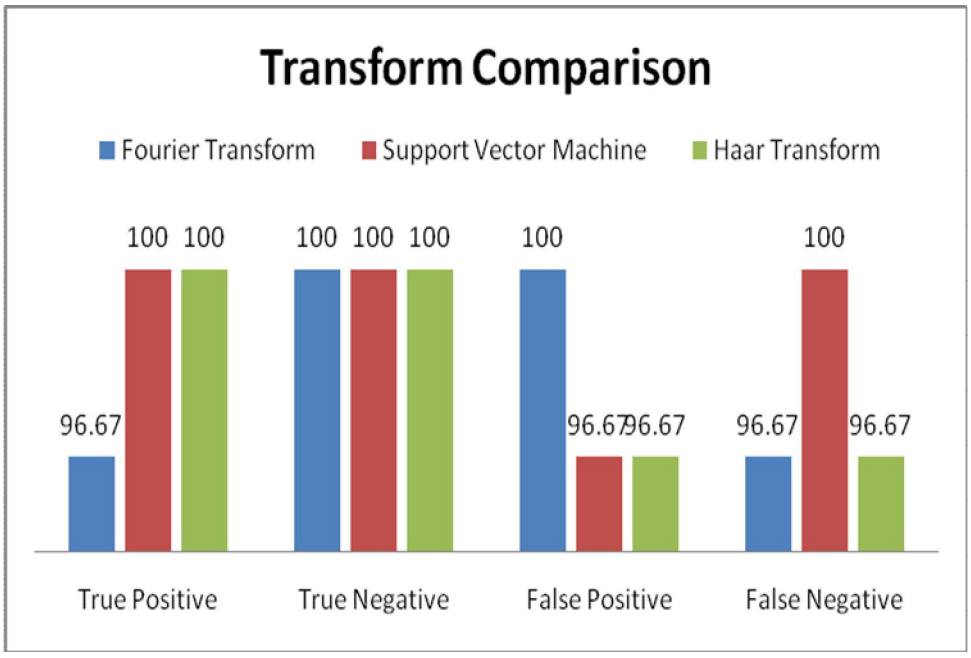

Figure7 Graph for Transform Comparison

CONCLUSION

This system mainly focus on the earlier detection of abnormal images by using SVM transform because of the implementation part strongly justify the result of SVM is recommended apart from other transform

this will be used for both stage1 as well as stage2 process of the system and totally taken 30 images from open database and for justification process True positive, True Negative, False Positive, False Negative will be taken into account for the measurement of the efficiency of the result in the table.

REFERENCES

1. https://www5.cs.fau.de/research/data/fundus-images/
2. Kiran Bala B. (2012) Biometrics for Mobile Banking. International Journal of Technology And Engineering System; 2(1): 95-97.
3. Kiran Bala B, BalaKumar A. (2017) The Combination of Steganography and Cryptography for Medical Image Applications. Biomedical and Pharmacology Journal. 10(4):1793-1797.
4. Kiran Bala, b., Infant Raj I. (2018) Comparative and identification of exact frequency domain approaches by using mammogram images. 2017 IEEE International Conference on Power, Control, Signals and Instrumentation Engineering (ICPCSI); 2536-2538.
5. Oliver, Torrent, (2012) Automatic microcalcification and cluster detection for digital and digitised mammograms. Journal of Knowledge-Based Systems; 28: 68–75.
6. Kiran Bala B, Lourdu Joanna. (2014) multi modal biometrics using cryptographic algorithm. European journal of academic essays 1(1):6-10.
7. Kiran Bala, B. Audithan, S. Kannan, G. and Raja, K. (2016). Frequency Domain Approaches for Breast Cancer Diagnosis. Australian Journal of Basic and Applied Sciences; 10 (2): 93-96.
8. Kiran Bala B, Nithya T.M. (2012) Remedy For Disease Affected Iris In Iris Recognition. International Journal of Research in Engineering and Technology. 332-334.