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Comparison of Different Transforms For Earlier Detection of Breast Cancer by Using Mammogram Images

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Abstract

To give attention in the medical field regarding the breast cancer treatment earlier detection through MRI image is very important for the medical field day by day different methods and techniques are coming to the medical field for the purpose of earlier detection to cure the disease in earlier stage which gives more life time to the patient for that purpose the proposed system deals with earlier detection for that different transformation used for the calculation of microcalcification as well as mass from the MRI images for entire process MIAS database has been used for the system to get exact result of those transformation.

INTRODUCTION

The system deals with make comparison among the different transformation like Fourier series, Laplace transform, Wavelet transform, Fast Fourier transform from that make the best transformation to detect earlier detection of breast cancer for the mammogram images.

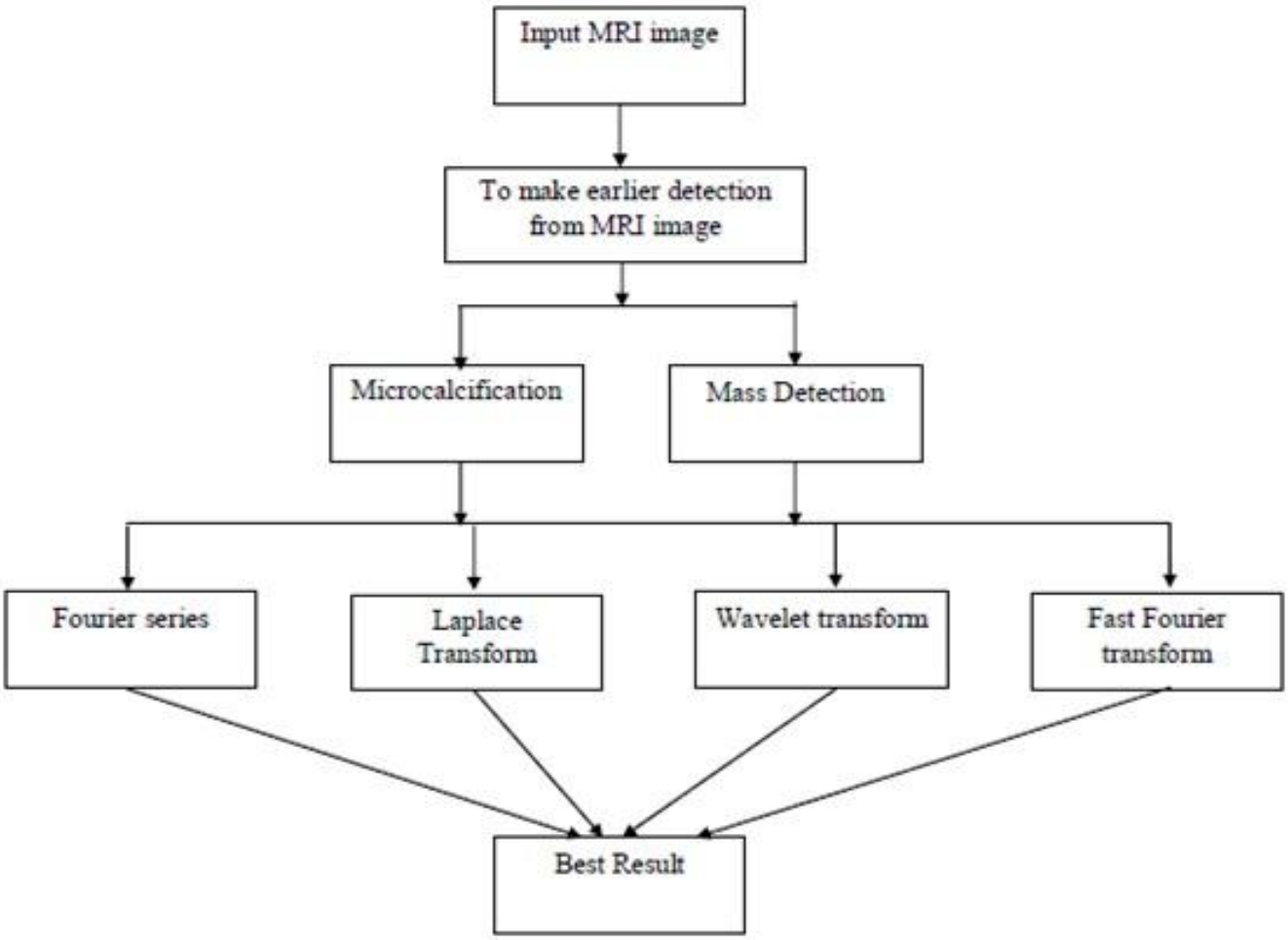

Figure 1. Basic block Diagram for the system

MATERIAL AND METHODS

The Input MRI image taken for the purpose of process the system in Time, FAR & FRR for both the microcalcification and mass detection in the proposed system and detection in earlier is possible for the breast cancer.

```
Input 'image'
Detection of microcalcification
If(image!=Detection not made)
Fourier series()
Result of time, FAR & FRR;
Laplace Transform()
Result of time, FAR & FRR;
Wavelet Transform()
Result of time, FAR & FRR;
Fast Fourier transform()
Result of time, FAR & FRR;
```

```
Mass calculation
Else if(image == microcalcification made &&
                mass not detected)
Fourier series()
Result of time, FAR & FRR;
Laplace Transform()
Result of time, FAR & FRR;
Wavelet Transform()
Result of time, FAR & FRR;
Fast Fourier transform()
Result of time, FAR & FRR;
```

The proposed system mainly execute the MRI image separately for right side as well as left side image and each part initially detection has been made for that those transformation taken into account and constrains like time, FAR & FRR for both the microcalcification as well as mass detection of the system which gives very much helpful and confidence to the medical field and support to the present technology for the new researchers as well as doctors.

IMPLEMENTATION

The implementation mainly deal with MIAS database for both left as well as right side image from the database in the proposed method first thing is used to find out the microcalcification processed by using the transformation constrain like time, FAR and FRR also taken in account for the better result purpose.

Table 1. Microcalcification Result

Transformation	Time	FAR	FRR
Fourier Series	0.21	99.26	99.26
Laplace Transform	0.25	98.52	98.52
Wavelet Transform	0.12	99.26	99.26
Fast Fourier Transform	0.22	98.52	99.26

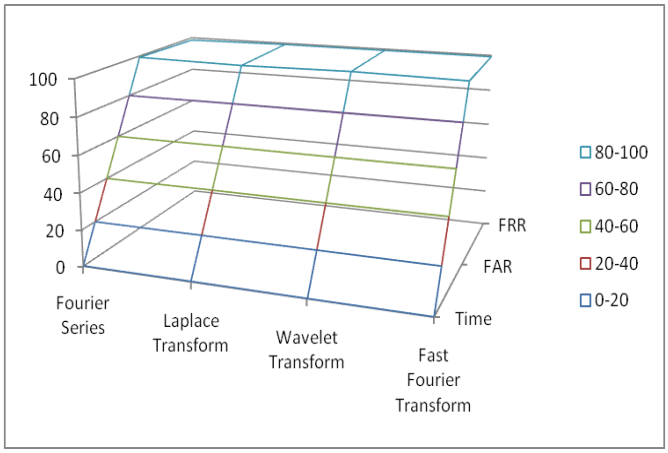

Figure 2. Graph result for microcalcification

Once completion of microcalcification part then move to the detection of mass and find out the mm is very important work in this proposed system for that purpose once again mass detection part left & right side MRI image processed and transformation taken into consideration and constrain like time, FAR & FRR for this also and to find out effective and efficient transformation for the implementation the work.

Table 2. Mass Result

Transformation	Time	FAR	FRR
Fourier Series	0.2	99.26	99.26
Laplace Transform	0.29	99.26	99.26
Wavelet Transform	0.15	99.26	99.26
Fast Fourier Transform	0.25	98.52	99.26

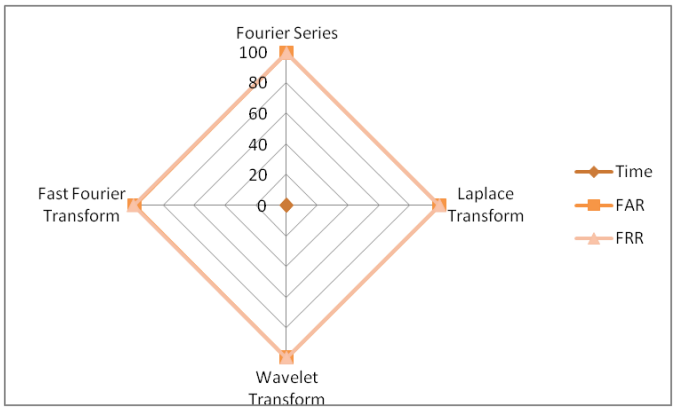

Figure 2. Graph result for Mass Detection

CONCLUSION

The system deals to detect the breast cancer in earlier stage for that purpose left side and right side MRI image processed carefully execute and microcalcification taken into account for better result after completion of the process then move to mass detection is very important ot known the MM of the cancer for the microcalcification as well as mass detection process Time, FAR & FRR are taken into account to make comparison between them and wavelet transformation is effective and efficient process for detection process and microcalacification stages.

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