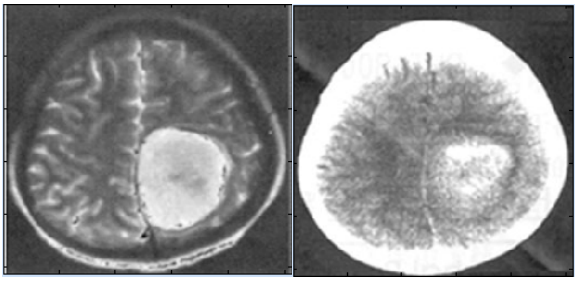

Figure 7: Set B of two medical images

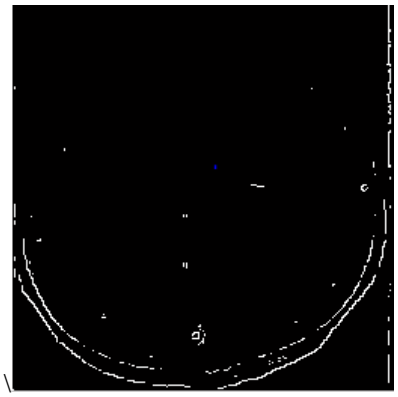

Figure 8: Canny edge detected Set B fused image

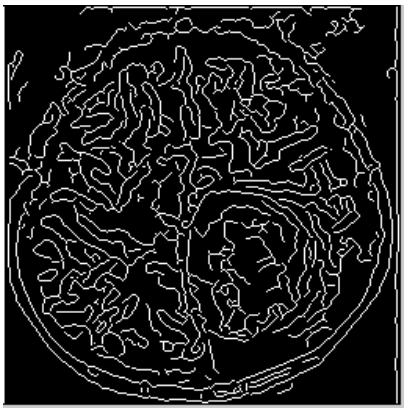

Figure 9: Fused Ant Colony Edge Detected Set B Image

Comparison of Edge detection using canny edge detection and ant colony edge method on set A and set B.

Table 1: Comparison of PSNR

Image Set	Fusion of images using HE and Canny Edge Method	Fusion of images using Rayleigh CLAHE and Ant Colony Edge Method
A	15.3222	25.1284
B	15.1136	20.5236

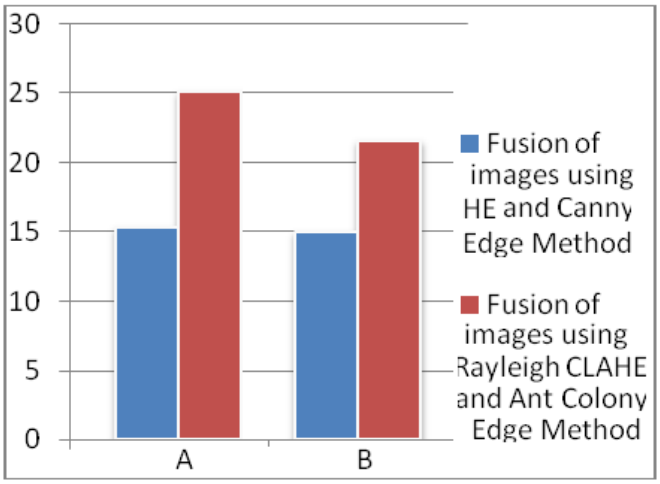

Figure 10: Bar chart showing comparison between PSNR

Table 2: Comparison of Entropy

Image Set	Fusion of images using HE and Canny Edge Method	Fusion of images using Rayleigh CLAHE and Ant Colony Edge Method
A	7.091	7.706
B	7.3404	7.6531

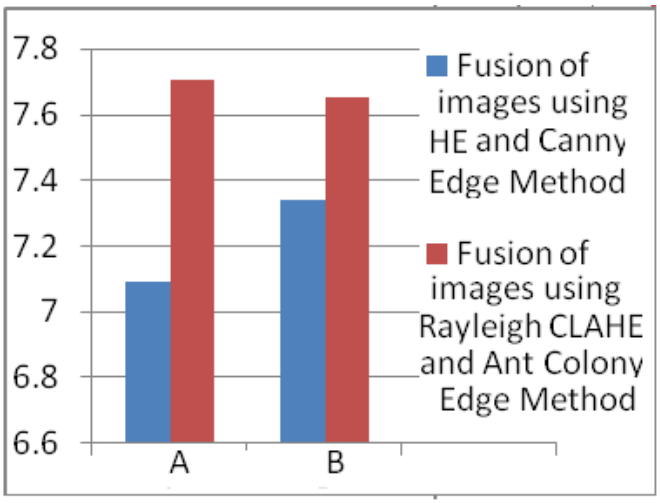

Figure 11: Bar chart showing comparison between Entropy

Table 3: Comparison of Mean Square Error

Image Set	Fusion of images using HE and Canny Edge Method	Fusion of images using Rayleigh CLAHE and Ant Colony Edge Method
A	1909.2568	199.638
B	2050.1689	451.2986

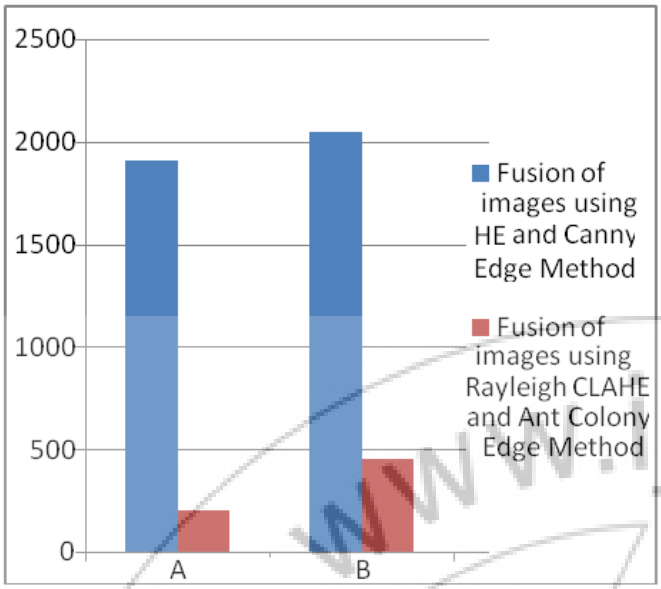

Figure 12: Bar chart showing comparison between Mean Square Error

Table 4: Comparison of Standard deviation

Image Set	Fusion of images using HE and Canny Edge Method	Fusion of images using Rayleigh CLAHE and Ant Colony Edge Method
A	61.6904	86.303
B	62.5378	86.2099

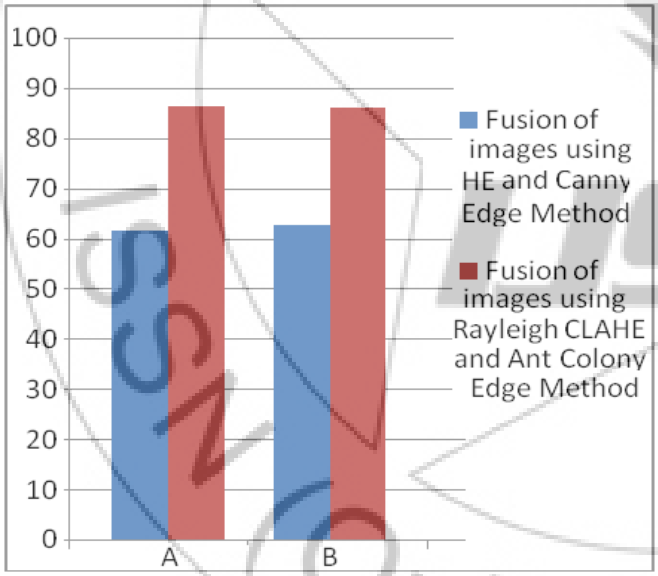

Figure 13: Bar chart showing comparison between Standard Deviation

Table 5: Comparison of Mean

Image Set	Fusion of images using HE and Canny Edge Method	Fusion of images using Rayleigh CLAHE and Ant Colony Edge Method
A	137.9454	143.5351
B	138.8395	150.1491

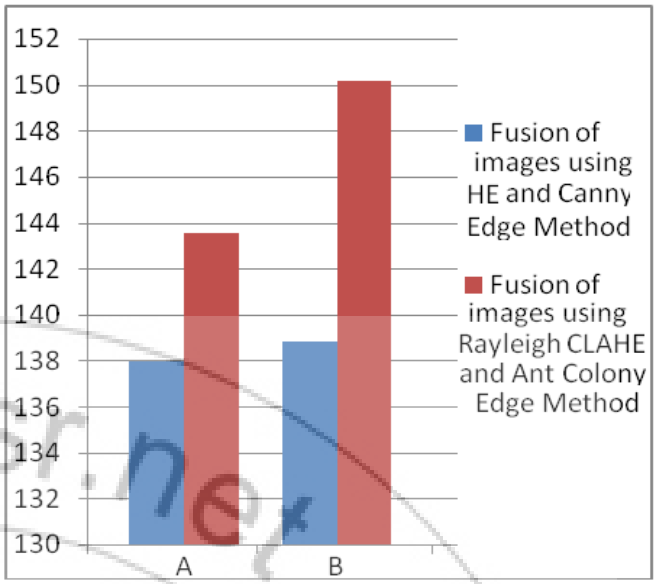

Figure 14: Bar chart showing comparison between Mean

7. Conclusion

In this the medical images are fused with two methods which are fusion of images by using histogram equalization and a proposed method which is fusion by using Rayleigh contrast limited adaptive histogram equalization method and the fused image edges are detected by using the Canny edge detection method and propose method which is ant colony edge method. A Rayleigh CLAHE method for image fusion using Ant colony Edge Detection based approach is used in the Proposed Method. The Rayleigh CLAHE approach is used in the proposed algorithm as it gives more visually pleasant images. The output results are compared qualitatively as well as quantitatively using quality measures.

8. Future Scope

As at present a lot of research had done in medical image fusion and also there will be a lot of further research is to be performed in coming years. In future there may be the use of HSF filter (Hypothesis Selective Filter) that is also used to enhance the image contrast which makes the image more clear and for the edge detection Hybrid method may be used in which there is a combination of both methods that are canny edge detection and ant colony edge method for edge detection of medical images to get the very less distortion in image and the image becomes more informative for the purpose of diagnosis as well as treatment.

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