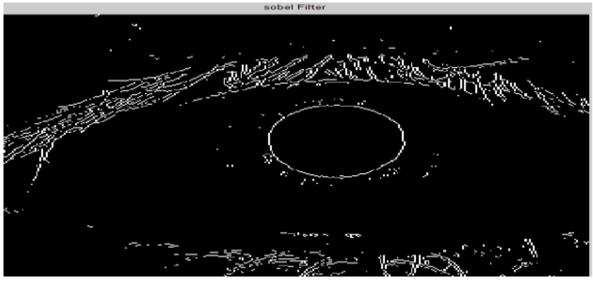

Fig.5.4 Detection of edges using Sobel mask.

All of the above discussed edge detectors are good to detect edges but not applicable to distant objects perfectly and also they contain noise factor as well. So, to overcome these problems advanced techniques also had been developed.

5.2 Edge detection using advanced techniques

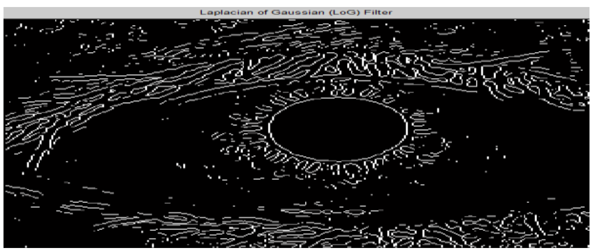

Fig.5.5 Detection of edges using LoG edge detector.

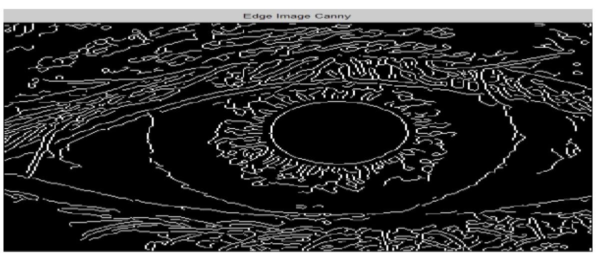

Fig.5.6 Detection of edges using canny edge detector.

Both of the above methods are good in detecting edges but still contains noise factor which can be overcome by combining the best aspects of both fuzzy and canny logic.

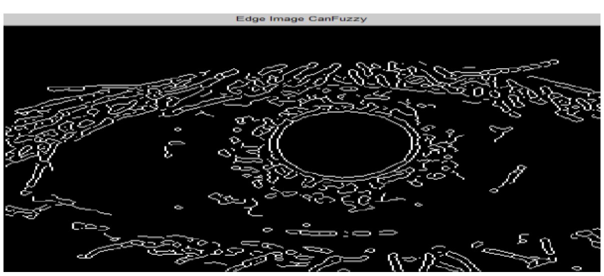

Fig.5.7 Detection of edges using Fuzzy-Canny logic.

6. Conclusion

The fuzzy – Canny edge detector presented in this paper uses both global (gray level histogram) and local (membership function for window) information and finally an important step of canny i.e. edge linking. The information which appears to be local is fuzzified using a modified Gaussian membership function. Contrast intensification operator is used to enhance the required level of visual quality by using entropy optimization of parameters *fh* and *xc*. Thereafter, the local edge detection operator is applied on the enhanced image using parameters α and β , which are again obtained from entropy optimization. Then on the resulting image edge thresholding is applied and thereafter canny edge detection is performed . Results show that this edge detector is immensely suitable for applications such as face recognition and fingerprint identification, as it does not distort the shape and is able to retain the important edges and continuous edges unlike the Canny and fuzzy-Canny edge detector. Choice of some of the parameters t, α and β is crucial for the success of this algorithm.

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