CHAPTER 7
CONCLUSION AND FUTURE ENHANCEMENT

7.1 CONCLUSION

A Degeneration Threshold Image Detection (DTID) framework employed to improve the contrasting on edge filtered images which are extended to incorporate Rapid Bilateral Filtering process to perform effective filtering edges of the contrast image. The filtering edges of the contrast images were improved for multi-resolution high contrast images and fetched the accurate detection results. These accurate results were arrived by determining the rapid bilateral filtering computations using Rapid Bilateral Filtering process for non-linear term. Next, the Shift-Invariant Base Pass Domain Filter significantly removes the outliers across the edges. Finally, the Affine Planar Transformation is applied on the edge filtered contrast image in DTID framework to attain high quality of image being detected.

Multi-Class Independent Component InfoMax Analysis (MICIA) method is used to handle multi-class poorly defined boundary images. The MICIA method based on Watershed cuts principle and Independent Component Analysis based on InfoMax provides an efficient means of richer segmentation of color textures with maximum likelihood function. Initially, the use of watershed cut principle and minimum spanning forest method measures with less computation time on multi-class images and to use color dilation and erosion points on two dimensional multi-class images for measuring relative minima distance of the mapping pixel points in MICIA method. Secondly, Multi-Class Independent Component Analysis is performed using
InfoMax method to assess multi-class normal distribution point with varying regions to maximize the true positive rate.

Intensity Histogram Equalization (IHE) method is developed for removing the noise defects and enhanced the image contrast. IHE method follows Mask Production, Enlightenment Equalization, And Color Normalization for efficient analysis of particular selected parameters. Mask Production makes the pixels and Region-of-Interest (ROI) in the complete photo image and rejects the backdrop of the image to generate a binary image. In addition, The IHE avoids the complex calculations and improve the max-flow, computational operations are used for obtain real-time implementable algorithm. IHE finds a mapping to get hold of a photo image with an intensity histogram threshold, which is designed based on the pixel value of images to obtain the accurate information of gradient movement.

Theoretical analysis and experimental result demonstrate that the DTID framework with criterion affine function showed better performance. The DTID framework minimizes the filtering time taken on contrast, and also improved the average contrast enhancement quality, detection accuracy rate by 11%. The Multi-Class Independent Component InfoMax Analysis (MICIA) method is used for maximizing the true positive rate using Corel Image Features Data Set extracted from UCI repository. In addition, the MICIA method improves the sub pixel accuracy and also achieves up to 17.5 % improvement on colour texture segmentation efficiency. The IHE algorithm, the noise removal ratio is averagely 12% improved in IHE method. IHE offers a different level of contrast enhancement with improved result in reliability, noise removal ratio and also provided the better intensity of quality images.
7.2 LIMITATION

The usage of Threshold Image Detection (DTID) framework increases the edge filtering of the contrast images and also improved the multi-resolution high contrast images and fetched the accurate detection result. However, it may increase the contrast of background noise; due to, contrast of the image can be appeared with introducing visual artifacts that decrease the visual quality of an image. In addition, the Affine Planar Transformation is applied on edge filtered contrast image for attaining high quality of image. It may require higher complexity computation.

7.3 FUTURE SUGGESTIONS

The future direction of the proposed work for detecting the background noise during the edge filtering process is also needs to address the high contrast images. Another future direction can be done on the fuzzy algorithm based enhancement process which produced the image contrast very effectively. If the detected data are disturbed by random noise then the Intensifier operator should change the probabilistic data into fuzzy data, so fuzzy algorithm also used for image enhancement to improve the quality of images. The fuzzy algorithm also needs to balance with complexity evaluation.