

LIST OF TABLES

Table 2-1: Selected previous significant work for de-noising of MRI data	13
Table 2-2: Selected previous significant work for post-processing enhancement of MRI data	16
Table 2-3: Selected previous significant work for fuzzy c-means based segmentation of MRI data.....	19
Table 3-1: Controlling parameters of MOPSO.....	34
Table 3-2: Performance evaluation of de-noising algorithms.....	47
Table 4-1: Controlling parameters of multi-objective PSO.....	60
Table 4-2: Controlling parameters for MO-BA.....	62
Table 4-3: Comparative performance of proposed MO-PSO optimized DSR algorithm with conventional contrast enhancement techniques.....	72
Table 4-4: Comparative performance of proposed MO-PSO optimized DSR algorithm with LMMSE filtering followed by conventional contrast enhancement techniques.....	73
Table 4-5: Optimized SR parameters and their respective enhancement metrics for different weighting coefficients of Bat optimization.....	74
Table 4-6: Quantitative evaluation of proposed MOBA optimized modified SR and other considered methodology	82
Table 4-7: Image quality of test images shown in Fig. 4.14 proposed cascaded DSR based on the MO-PSO algorithm.....	87
Table 4-8: Comparison of proposed cascaded DSR based on MO-PSO and other input parameter independent enhancement methods on ten simulated T1 and T2 weighted dataset images	89
Table 5-1: Comparative performance evaluation parameters for Test images shown in Fig. 5.6.....	108
Table 6-1: Performance comparison of different multi-objective optimization methods on ten simulated MRI dataset images	138
Table 7-1: Details of noisy synthetic images used in the study.....	153
Table 7-2: Segmentation accuracy of twenty-four synthetic images suffered from Gaussian and speckle noise	156

Table 7-3: Mean segmentation accuracy (with standard deviation) for thirty MRI dataset images (including ten 9% noise with 0% inhomogeneity, ten 9% noise with 20% inhomogeneity and ten 7% noise with 20% inhomogeneity) 158

Table 7-4: Comparison of validity indexes for detection of correct number of clusters 161