

Contents

1	Introduction	1
1.1	Binarization and Image Segmentation	1
1.2	Binarization of an Image	2
1.3	Binarization of Graphic and Document Images	3
1.4	Calculating Threshold for Binarization	3
1.5	Applications of Binarization	4
	References	4
2	A Comprehensive Survey on Image Binarization Techniques	5
2.1	Foundations of Image Binarization Techniques	5
2.2	Recent Works	11
	References	14
3	A New Image Binarization Technique Using Iterative Partitioning	17
3.1	Image Binarization Using Iterative Partitioning	17
3.1.1	Motivation of the Work	17
3.1.2	Proposed Methodology: Binarization Using Iterative Partitioning	18
3.1.3	Evaluation Measures	25
3.1.4	Experimental Dataset	28
3.1.5	Experimental Verification	30
3.1.6	Conclusions	43
	References	43
4	A Framework for Creating Reference Image for Degraded Document Images	45
4.1	Motivation of the Work	46
4.2	Proposed Methodology	47
4.3	Determining the Value of k	48
4.4	Benchmark Dataset	55

4.5	Experimental Verification	57
4.5.1	Majority Voting Method	57
4.5.2	Comparative Performance Analysis	61
4.6	Conclusions	62
	References	63
5	Applications of Binarization	65
5.1	Document Image Processing and OCR	65
5.2	Medical Image Processing	66
5.3	Video Processing	66
5.4	Face Detection	67
5.5	Hand Gesture Recognition	67
5.6	Fingerprint Recognition	68
5.7	Iris Recognition	68
5.8	Gait Recognition	69
	References	69
6	Conclusions	71
	Appendix A: Sample Test Images	75
	Index	81

Exploring Image Binarization Techniques

Chaki, N.; Shaikh, S.H.; Saeed, K.

2014, XII, 82 p. 34 illus., Hardcover

ISBN: 978-81-322-1906-4