Table of Contents

1	Table	of Contents	i
L	ist of	Figures	iii
L	ist of	Tables	
A	bstra	act	v vi
A	bbre	viations	vii
1	Intr	roductions	1
	1.1	Resizing Digital Image	1 1
	1.2	Organization of the Dissertation	1
0	CD1		4
2	The	Optical Model of Human Visual System	5
	2.1	Background	5
	2.2	Construction of the Eye Simplified Model of the Eye	6
	2.3 2.4		8
	2.4	Image Formation in the Eye	9
		2.4.1 Image Location and Image Height of thin lens	9
	0.5	2.4.2 Image Location and Image Size in the Eye	14
	2.5	Region Of Sharp Area	15
	2.6	Image Confusion of the Eye	17
	2.7	Application to Virtual Reality – ROSA render	21
	2.8	Application to Image Compression – Multiple Resolutions Image Com-	
	0.0	pression	26
	2.9	Summary	20

3	Methods to Resize Digital Image	36			
	3.1 Basic Definitions	36			
	3.2 Digital Image Resizing	37			
	3.2.1 Interpolation and Spline-based Method	38			
	3.2.2 Fourier Transform and Cosine Transform(FT/CT)	41			
	3.2.3 Pixel Replication	43			
	3.2.4 Area re-sampling	47			
	3.3 Summary	47			
4	Image Resizing by Random Sampling 4.1 Introduction	49 49 51			
	4.3 Experimental Results	53			
5	Conclusions	63			
A	Weiman Algorithm in Clanguage	65			
Bi	Bibliography				