

LIST OF FIGURES

Figure 1.1	Typical environment for image coding	2
Figure 2.1	Two-channel image coding system	14
Figure 2.2a	Centipede Model Parameters for the edge on the contour shown in (c)	22
Figure 2.2b	2D Edge Profile	22
Figure 2.2c	Contour	23
Figure 3.1	$R(x;\lambda,\tau)$ and $G(x;\lambda,\tau)$ filters	29
Figure 3.2a	Edges detected on $\lambda\tau$ -space	30
Figure 3.2b	Images on $\lambda\tau$ -space	31
Figure 3.3a	4-connected directions	32
Figure 3.3b	8-connected directions	32
Figure 3.4a	Original Edge Map	32
Figure 3.4b	Edge map after conversion	32
Figure 3.5	Edge tracing algorithm	34
Figure 3.6	Reconstructed Brain Images	38
Figure 3.7	Reconstructed Lenna Images	39
Figure 3.8	Reconstructed House Images	42
Figure 3.9	4 and 8-connected directions	43
Figure 3.10	Huffman coded differential chain code format	44
Figure 3.11	Code book for differential chain	45
Figure 4.1	A non symmetric edge profile (C_{org}) and the reconstructed edge profile (C_{cons}) with the centipede model ($C_{centipede}$)	49
Figure 4.2	Edge profile extraction	50
Figure 4.3a	Original House Image	52
Figure 4.3b	Edges detected by GED for ($\lambda=2.0, \tau=0.5$, case II)	52
Figure 4.3c	Intensities at (d)	52
Figure 4.3d	Edge and Width Map	52
Figure 4.3e	The centipede model overlaid on the original House image	52
Figure 4.4a	Original Brain Image	53
Figure 4.4b	Edges detected by GED for ($\lambda=0.5, \tau=0.5$, case II)	53

Figure 4.4c	Intensities at (d)	53
Figure 4.4d	Edge and Width Map	53
Figure 4.4e	The centipede model overlaid on the original Brain image	53
Figure 4.5a	Original Lenna Image	54
Figure 4.5b	Edges detected by GED for ($\lambda=2.0, \tau=0.5$, case II)	54
Figure 4.5c	Intensities at (d)	54
Figure 4.5d	Edge and Width Map	54
Figure 4.5e	The centipede model overlaid on the original Lenna image	54
Figure 4.6a	Original Lenna Image	62
Figure 4.6b	Edges detected by GED for ($\lambda=0.5, \tau=0.5$)	62
Figure 4.6c	Reconstructed Lenna Image for (1,1,1) nmse=41.34, snr=17.66, psnr=49.35	62
Figure 4.6d	Reconstructed Lenna Image for (2,2,1) nmse=39.15, snr=18.75, psnr=50.44	62
Figure 4.6e	Reconstructed Lenna Image for (3,4,1) nmse=38.83, snr=19.17, psnr=50.86	63
Figure 4.6e	Reconstructed Lenna Image for (3,5,2) nmse=37.09, snr=19.40, psnr=51.09	63
Figure 4.7	Compression results for different types of images	66
Figure 4.8	Compression result for Cameraman Image	68
Figure 4.9	Compression result for Lena Image	70
Figure 4.10	Compression result for House Image	72