

Contents

1	Overview	1
1.1	Segmenting with depth	2
1.2	Edge terminations and continuations	4
1.3	A variational model	7
1.4	A computer algorithm	11
2	Filtering for Occlusion Detection	13
2.1	Nonlinear diffusion	18
2.2	Experimental results	23
2.3	Using Q for corner detection	27
3	Finding Contours and Junctions	33
3.1	Finding edges	34
3.2	Finding corners and T-junctions	40
3.3	Curve smoothing	42
4	Continuations	51
4.1	The psychology of continuations	51
4.2	Elastica	55
4.3	Matching ends and computing continuations	58
4.4	Results	61
5	Finding the 2.1D Sketch	73
5.1	Recursive search	73
5.2	Results on pictures	75
6	Conclusion	83
A	Derivations for the Nonlinear Filter	87
B	Program Code	91
B.1	Nonlinear filter	91
B.2	Edge tracing	96
	Bibliography	141