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Optic Minds
ITAI 1378
Prof. Patricia McManus
A06

A06 ITAI 1378 Manual CNN

0	0	1	0	0
0	0	1	0	0
1	1	1	1	1
0	0	1	0	0
0	0	1	0	0

- 0 represents black pixels.
- 1 represents white pixels.
- Image = cross

Vertical Edge Filter

-1	0	1
-1	0	1
-1	0	1

Horizontal Edge Filter

-1	-1	-1
0	0	0
1	1	1

Vertical: Convolve and Calculate Cells:

0	0	1	0	0
0	0	1	0	0
-1	0	1	1	1
0	0	1	0	0
0	0	1	0	0

0	0	0	0	0
0	0	0	0	0
1	-1	1	1	1
0	0	1	0	0
0	0	1	0	0

0	0	-1	0	0
0	0	-1	0	0
1	1	-1	0	1
0	0	1	0	0
0	0	1	0	0

0	0	1	0	0
0	0	1	0	0
-1	0	1	1	1
0	0	1	0	0
0	0	1	0	0

0	0	1	0	0
0	0	0	0	0
1	-1	0	1	1
0	0	0	0	0
0	0	1	0	0

0	0	1	0	0
0	0	-1	0	0
1	1	-1	0	1
0	0	-1	0	0
0	0	1	0	0

0	0	1	0	0
0	0	1	0	0
-1	0	1	1	1
0	0	1	0	0
0	0	1	0	0

0	0	1	0	0
0	0	1	0	0
1	-1	0	1	1
0	0	0	0	0
0	0	0	0	0

0	0	1	0	0
0	0	1	0	0
1	1	-1	0	1
0	0	-1	0	0
0	0	-1	0	0

Results After Adding:

0	2	0	-2	0
1	2	0	-2	-1
1	2	0	-2	-1
1	2	0	-2	-1
0	2	0	-2	0

Horizontal: Convolve and Calculate Cells:

0	0	-1	0	0
0	0	0	0	0
1	1	1	1	1
0	0	1	0	0
0	0	1	0	0

0	0	-1	0	0
0	0	0	0	0
1	1	1	1	1
0	0	1	0	0
0	0	1	0	0

0	0	-1	0	0
0	0	0	0	0
1	1	1	1	1
0	0	1	0	0
0	0	1	0	0

0	0	1	0	0
0	0	-1	0	0
0	0	0	1	1
0	0	1	0	0
0	0	1	0	0

0	0	1	0	0
0	0	-1	0	0
1	0	0	0	1
0	0	1	0	0
0	0	1	0	0

0	0	1	0	0
0	0	-1	0	0
1	1	0	0	0
0	0	1	0	0
0	0	1	0	0

0	0	1	0	0
0	0	1	0	0
-1	-1	-1	1	1
0	0	0	0	0
0	0	1	0	0

0	0	1	0	0
0	0	1	0	0
1	-1	-1	-1	1
0	0	0	0	0
0	0	1	0	0

0	0	1	0	0
0	0	1	0	0
1	1	-1	-1	-1
0	0	0	0	0
0	0	1	0	0

Results After Adding:

0	1	1	1	0
1	2	2	2	1
0	0	0	0	0
-1	-2	-2	-2	-1
0	-1	-1	-1	0