



deeplearning.ai

Convolutional Neural Networks

Edge detection example

Computer Vision Problem



vertical edges



horizontal edges

Vertical edge detection

3 ¹	0 ⁰	1 ⁻¹	2 ⁻¹	7 ⁻⁰	4 ⁻¹
1 ¹	5 ⁰	8 ⁻¹	9 ⁻¹	3 ⁻⁰	1 ⁻¹
2 ¹	7 ⁰	2 ⁻¹	5 ⁻¹	1 ⁻⁰	3 ⁻¹
0 ¹	1 ⁰	3 ⁻¹	1 ⁻¹	7 ⁻⁰	8 ⁻¹
4	2	1	6	2	8
2	4	5	2	3	9

*

=

0	-2	-4	-7
-3	-2	-3	-16

Vertical edge detection

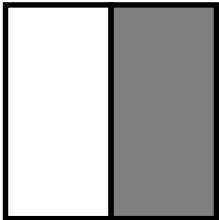
10	10	10	0	0	0
10	10	10	0	0	0
10	10	10	0	0	0
10	10	10	0	0	0
10	10	10	0	0	0
10	10	10	0	0	0

*

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

=

0	30	30	0
0	30	30	0
0	30	30	0
0	30	30	0



*

