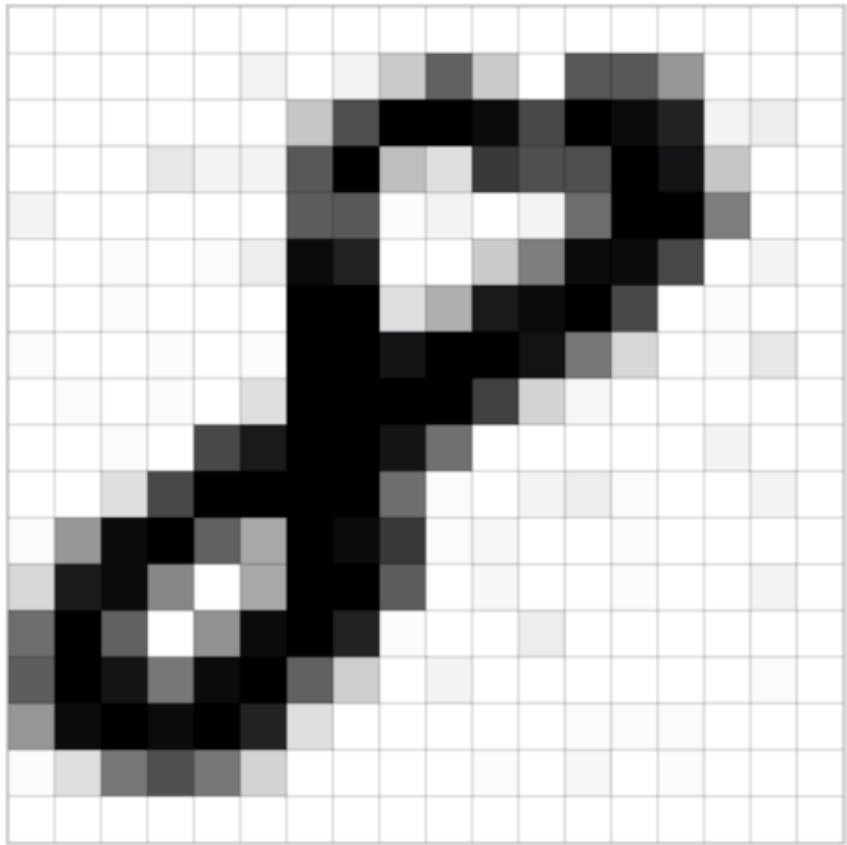


5.1 CNN

- CNN (Convolutional Neural Network) 가

5.1.1 가



```

0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0
0 0 0 0 1 12 0 11 39 137 37 0 152 147 84 0 0
0 0 1 0 0 0 41 160 250 255 235 162 255 238 206 11 13
0 0 0 16 9 9 150 251 45 21 184 159 154 255 233 40 0
10 0 0 0 0 0 145 146 3 10 0 11 124 253 255 107 0
0 0 3 0 4 15 236 216 0 0 38 109 247 240 169 0 11
1 0 2 0 0 0 253 253 23 62 224 241 255 164 0 5 0
6 0 0 4 0 3 252 250 228 255 255 234 112 28 0 2 17
0 2 1 4 0 21 255 253 251 255 172 31 8 0 1 0 0
0 0 4 0 163 225 251 255 229 120 0 0 0 0 0 11 0
0 0 21 162 255 255 254 255 126 6 0 10 14 6 0 0 9
3 79 242 255 141 66 255 245 189 7 8 0 0 5 0 0 0
26 221 237 98 0 67 251 255 144 0 8 0 0 7 0 0 11
125 255 141 0 87 244 255 208 3 0 0 13 0 1 0 1 0
145 248 228 116 235 255 141 34 0 11 0 1 0 0 0 1 3
85 237 253 246 255 210 21 1 0 1 0 0 6 2 4 0 0
6 23 112 157 114 32 0 0 0 0 2 0 8 0 7 0 0
0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0

```

- 가 가 (: <http://bit.ly/2M7ni7c>)
- 가 ,

5.1.2



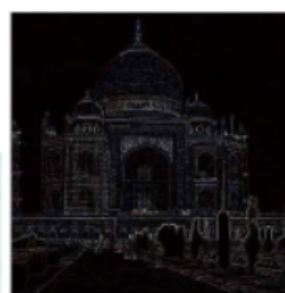
원본 이미지

0	0	0	0	0
0	0	-1	0	0
0	-1	5	-1	0
0	0	-1	0	0
0	0	0	0	0



채도 높이기

	0	1	0	
	1	-4	1	
	0	1	0	

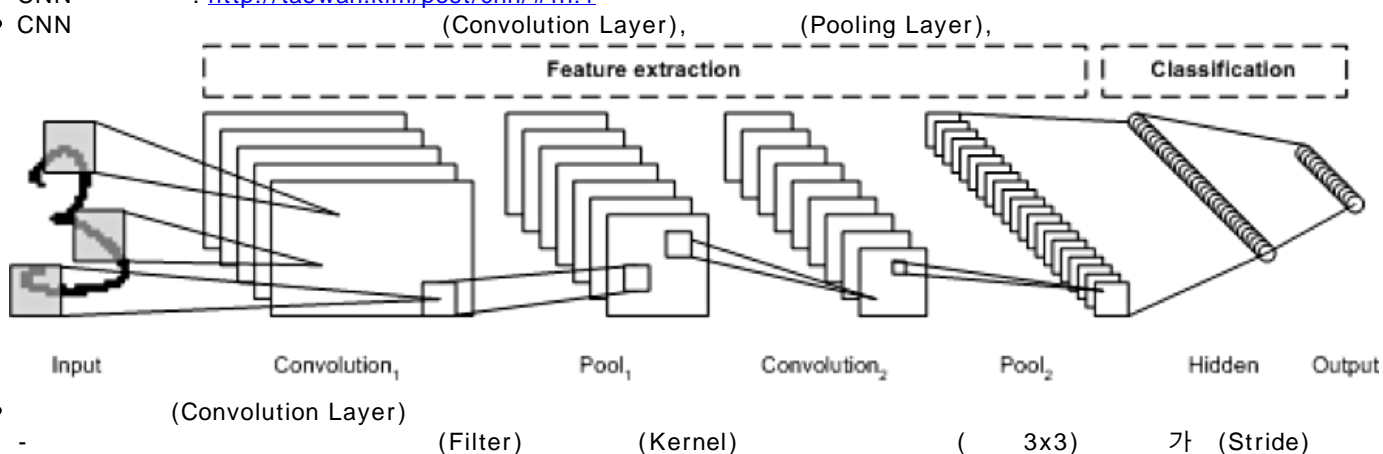


윤곽선 검출

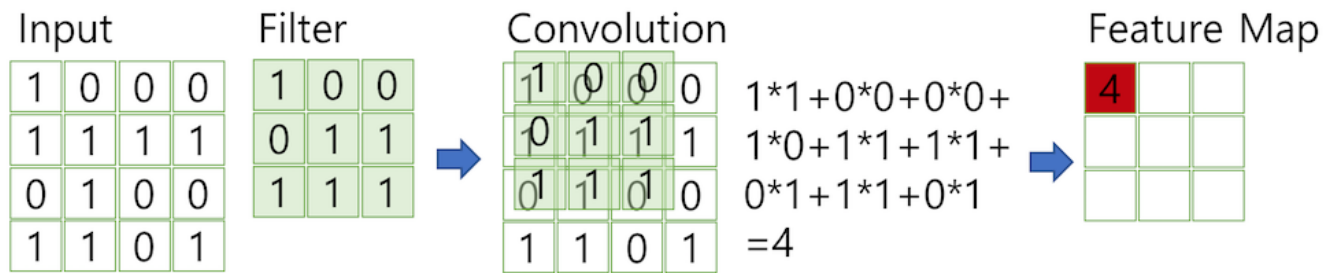
- (,) 가
- : <https://yjs-program.tistory.com/139>

5.1.3 CNN

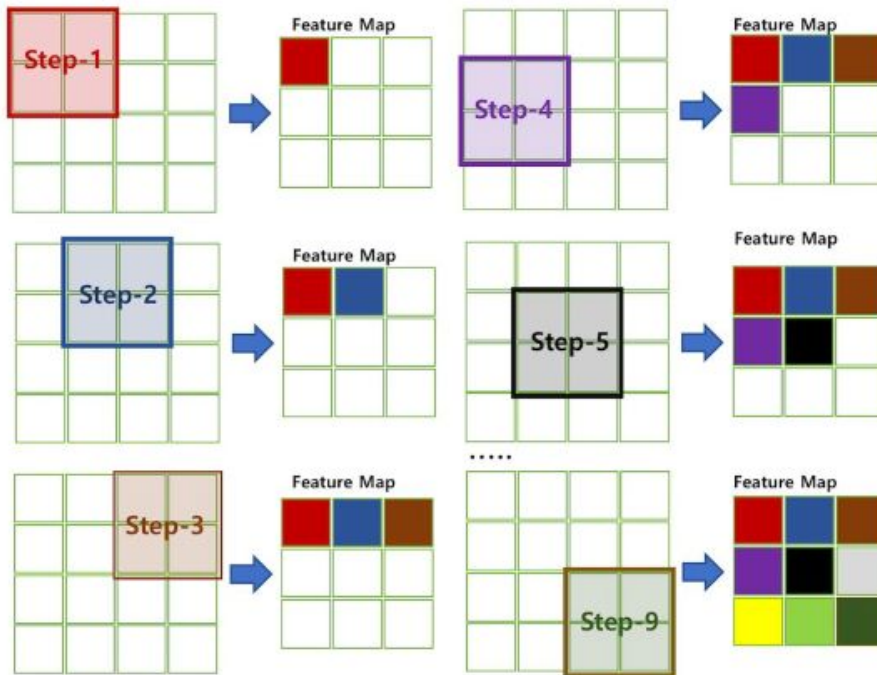
- CNN : <http://taewan.kim/post/cnn/#fn:1>
- CNN



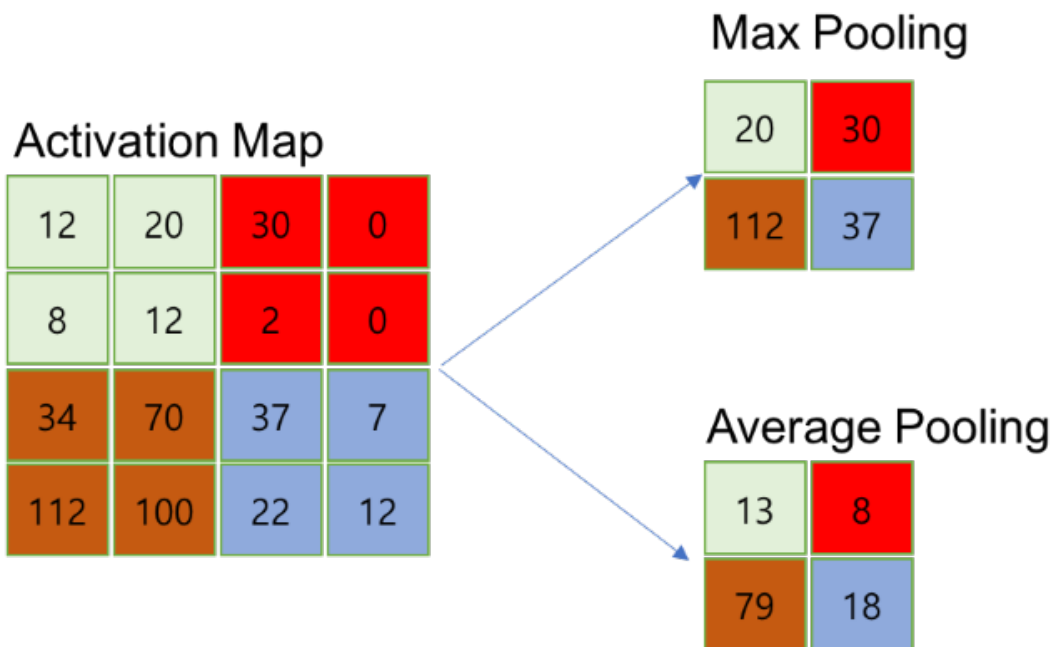
- , (Feature Map)
- (Feature Map) , (Pooling)



<http://taewan.kim>



- (Pooling Layer)
- (Feature Map)
- Max Pooling, Average Pooling, Min Pooling



- (Channel)
- RGB 3 3 3 (Channel)
- 2 1
- ex) 가 39 31 shape (39, 31, 3), (39, 31, 1)
- (ANN)
- https://redmine.sweetk.co.kr/projects/nlp/wiki/33_%EC%8B%A0%EA%B2%BD%EB%A7%9D_%EB%AA%A8%EB%8D%B8_%EA%B5%AC%ED%98%84%ED%95%98%EA%B8%B0

clipboard-202204061622-fm4cf.png	18.6 KB	2022-04-06
clipboard-202204061622-irlpy.png	369 KB	2022-04-06
clipboard-202204061650-xja48.png	192 KB	2022-04-06
clipboard-202204081029-lo7lb.png	54.5 KB	2022-04-08
clipboard-202204081302-xkrxr.png	86.6 KB	2022-04-08
clipboard-202204081315-w7gl0.jpg	89.6 KB	2022-04-08
clipboard-202204081321-6zaou.png	48.1 KB	2022-04-08