| SL.No | | Activation Shape | Activation Size | # Parameters |
|---|---|---|---|---|
| 1. | Input Layer: | (32, 32, 3) | 3072 | 0 |
| 2. | CONV1 (f=5, s=1) | (28, 28, 8) | 6272 | 608 |
| 3. | POOL1 | (14, 14, 8) | 1568 | 0 |
| 4. | CONV2 (f=5, s=1) | (10, 10, 16) | 1600 | 3216 |
| 5. | POOL2 | (5, 5, 16) | 400 | 0 |
| 6. | FC3 | (120, 1) | 120 | 48120 |
| 7. | FC4 | (84, 1) | 84 | 10164 |
| 8. | Softmax | (10, 1) | 10 | 850 |

① Input → colored image with size 32 * 32 * 3 (height size, width size, channel (RGB))

activation size = 32 * 32 * 3 = 3072

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② Conv2 (filter size = 5, stride = 1) and # filters = 8

output image size = $\frac{32-5+2(0)}{1}+1 = 28$

∴ activation shape (28, 28, 8) & activation size = 28 * 28 * 8 = 6272

# parameters = 5 * 5 * 3 * 8 = 608

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③ pool size = 2 ∴ The output image = 28/2 = 14

Note: number of filter will not change

activation shape (14, 14, 8)

activation size = 14 * 14 * 8 = 1568

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④ Conv2 ( filter size = 5, stride = 1) and # filters = 16

output image size = $\frac{14 - 5 + 2(0)}{1} + 1 = 10$

∴ activation shape (5, 5, 16) ↓ activation size = 10 * 10 * 16 = 1600

# parameters = 5 * 5 * 8 * 16 + 16 = 3216

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⑤ pool size = 2 ∴ The output image = 10/2 = 5

Note: number of filter will not change

activation shape (5, 5, 16)

activation size = 5 * 5 * 16 = 400

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⑥ # hidden nodes (120)

activation size = 120 * 1 = 120

# parameters = 120 * 400 + 120 = 48120

(400: from the previous layer)

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⑦ # hidden nodes (84)

activation size = 84 * 1 = 84

# parameters = 84 * 120 + 84 = 10164

(120: from the previous layer)

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⑧ # ouput = 10 ↓ activation size = 10 * 1 = 10

# parameter = 10 * 84 + 10 = 850 (84: from the last layer)