

True Label: Amphibia



True Label: Animalia



True Label: Arachnida



True Label: Aves



True Label: Fungi



True Label: Insecta



True Label: Mammalia



True Label: Mollusca



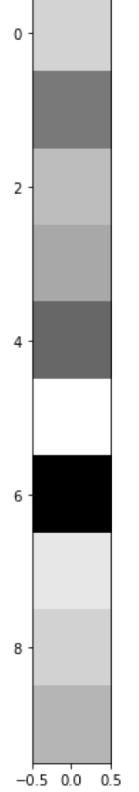
True Label: Plantae



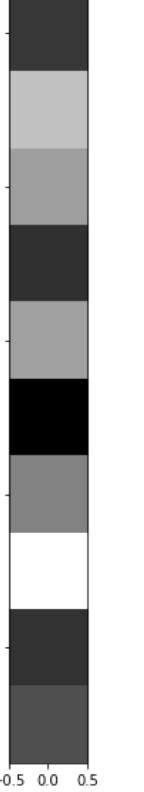
True Label: Reptilia



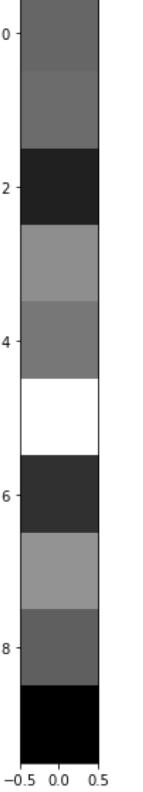
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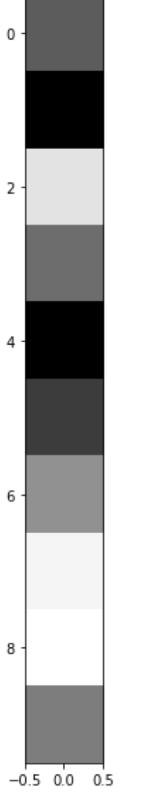
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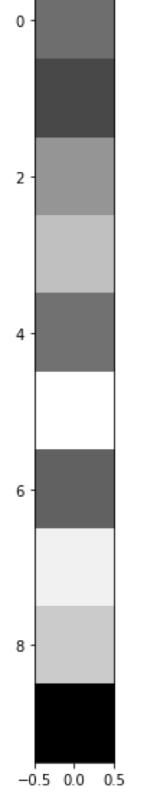
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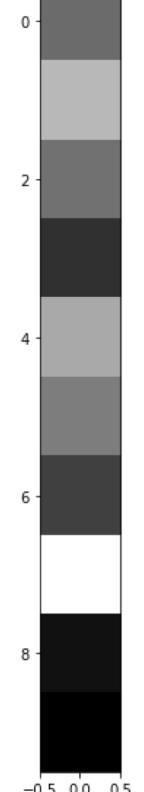
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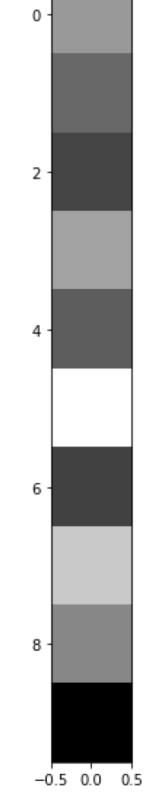
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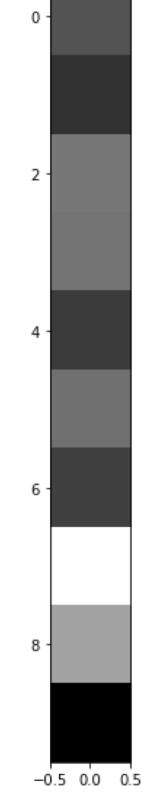
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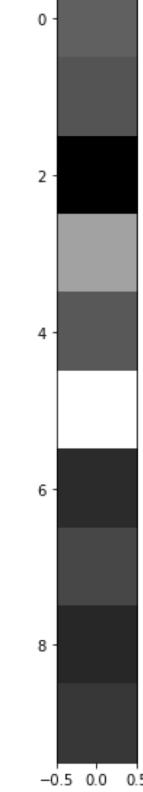
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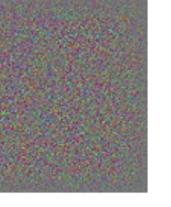
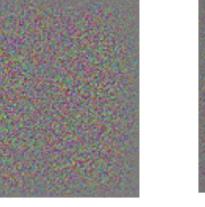
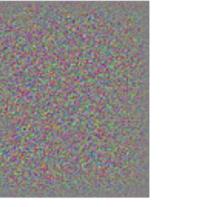
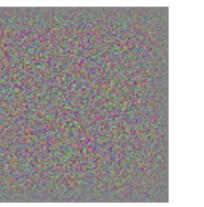
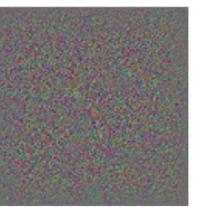
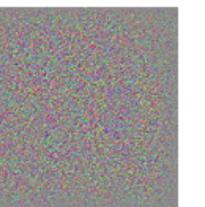
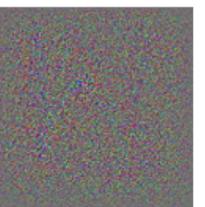
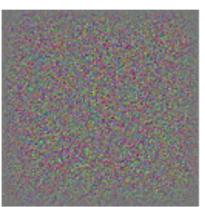
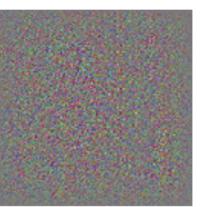
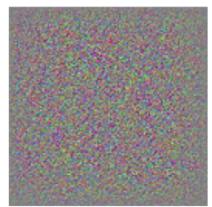
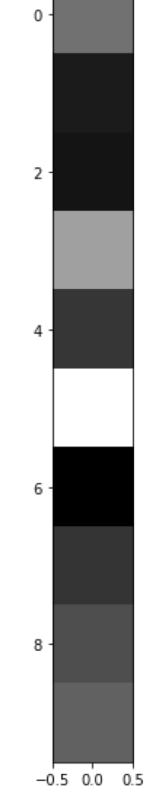
['conv2d_9']



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['conv2d_9']



Layer name	Tensor Size	Weights	Biases	Parameters
Input image	128X128X3	0	0	0
CONV1	$(128 - k + 1) \times (128 - k + 1) \times m$	$3mk^2$	m	$3mk^2 + m$
MAXPOOL1	128X128xm	0	0	0
CONV2	$(128 - k + 1) \times (128 - k + 1) \times m$	mk^2	m	$mk^2 + m$
MAXPOOL2	128X128xm	0	0	0
CONV3	$(128 - k + 1) \times (128 - k + 1) \times m$	mk^2	m	$mk^2 + m$
MAXPOOL3	128X128Xm	0	0	0
CONV4	$(128 - k + 1) \times (128 - k + 1) \times m$	mk^2	m	$mk^2 + m$
MAXPOOL4	128X128Xm	0	$7mk^2 + 5m + 49164n$	0
CONV5	$(128 - k + 1) \times (128 - k + 1) \times m$	mk^2	m	$mk^2 + m$
MAXPOOL5	128X128Xm	0	0	0
FC1	$49152 \times n$	$49152n$	n	$49153n$
OUTPUT	$n \times 10$	$10n$	n	$11n$

Layer name	Tensor Size (TS)	Multiplications	Additions
Input image	128X128X3	0	0
CONV1	$(128 - k + 1) \times (128 - k + 1) \times m$	$3mk^2 (129 - k)^2$	$m(3k^2-1)(129 - k)^2$
CONV2	$(128 - k + 1) \times (128 - k + 1) \times m$	$3mk^2 (129 - k)^2$	$m(3k^2-1)(129 - k)^2$
CONV3	$(128 - k + 1) \times (128 - k + 1) \times m$	$3mk^2 (129 - k)^2$	$m(3k^2-1)(129 - k)^2$
CONV4	$(128 - k + 1) \times (128 - k + 1) \times m$	$3mk^2 (129 - k)^2$	$m(3k^2-1)(129 - k)^2$
CONV5	$(128 - k + 1) \times (128 - k + 1) \times m$	$3mk^2 (129 - k)^2$	$m(3k^2-1)(129 - k)^2$

The computations at the maxpool layer have not been included in the tabular column. Since we have assumed maxpool size = 1, it does as many as the input size, that is, $(128 \times 128 \times m)$.

Total number of computations at CONV layers is $15mk^2 (129 - k)^2$ multiplications + $5m(3k^2-1)(129 - k)^2$ additions + 5 x maxpool_compute(size = (128,128,m))