Model 1 Structure :

Model: "sequential"

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Layer (type) Output Shape Param #

=================================================================

conv2d (Conv2D) (None, 30, 30, 32) 896

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max\_pooling2d (MaxPooling2D) (None, 15, 15, 32) 0

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conv2d\_1 (Conv2D) (None, 13, 13, 64) 18496

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max\_pooling2d\_1 (MaxPooling2 (None, 6, 6, 64) 0

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conv2d\_2 (Conv2D) (None, 4, 4, 64) 36928

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flatten (Flatten) (None, 1024) 0

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dense (Dense) (None, 64) 65600

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dense\_1 (Dense) (None, 10) 650

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Total params: 122,570

Trainable params: 122,570

Non-trainable params: 0

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Model 2 Structure :

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Layer (type) Output Shape Param #

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conv2d\_1 (Conv2D) (None, 32, 32, 32) 896

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conv2d\_2 (Conv2D) (None, 30, 30, 32) 9248

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max\_pooling2d\_1 (MaxPooling2 (None, 15, 15, 32) 0

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dropout\_1 (Dropout) (None, 15, 15, 32) 0

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conv2d\_3 (Conv2D) (None, 15, 15, 64) 18496

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conv2d\_4 (Conv2D) (None, 13, 13, 64) 36928

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max\_pooling2d\_2 (MaxPooling2 (None, 6, 6, 64) 0

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dropout\_2 (Dropout) (None, 6, 6, 64) 0

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conv2d\_5 (Conv2D) (None, 6, 6, 64) 36928

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conv2d\_6 (Conv2D) (None, 4, 4, 64) 36928

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max\_pooling2d\_3 (MaxPooling2 (None, 2, 2, 64) 0

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dropout\_3 (Dropout) (None, 2, 2, 64) 0

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flatten\_1 (Flatten) (None, 256) 0

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dense\_1 (Dense) (None, 512) 131584

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dropout\_4 (Dropout) (None, 512) 0

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dense\_2 (Dense) (None, 10) 5130

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Total params: 276,138

Trainable params: 276,138

Non-trainable params: 0

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Model 3 Structure:

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Layer (type) Output Shape Param #

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conv2d\_33 (Conv2D) (None, 30, 30, 32) 896

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max\_pooling2d\_28 (MaxPooling (None, 15, 15, 32) 0

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dropout\_26 (Dropout) (None, 15, 15, 32) 0

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conv2d\_34 (Conv2D) (None, 13, 13, 64) 18496

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max\_pooling2d\_29 (MaxPooling (None, 6, 6, 64) 0

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dropout\_27 (Dropout) (None, 6, 6, 64) 0

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conv2d\_35 (Conv2D) (None, 4, 4, 64) 36928

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max\_pooling2d\_30 (MaxPooling (None, 4, 4, 64) 0

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dropout\_28 (Dropout) (None, 4, 4, 64) 0

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conv2d\_36 (Conv2D) (None, 4, 4, 64) 4160

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max\_pooling2d\_31 (MaxPooling (None, 4, 4, 64) 0

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dropout\_29 (Dropout) (None, 4, 4, 64) 0

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flatten\_6 (Flatten) (None, 1024) 0

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dense\_13 (Dense) (None, 512) 524800

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dense\_14 (Dense) (None, 256) 131328

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dense\_15 (Dense) (None, 10) 2570

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Total params: 719,178

Trainable params: 719,178

Non-trainable params: 0

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Model 4 :

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Layer (type) Output Shape Param #

=================================================================

conv2d (Conv2D) (None, 30, 30, 32) 896

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conv2d\_1 (Conv2D) (None, 30, 30, 32) 1056

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max\_pooling2d (MaxPooling2D) (None, 15, 15, 32) 0

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dropout (Dropout) (None, 15, 15, 32) 0

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conv2d\_2 (Conv2D) (None, 13, 13, 64) 18496

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conv2d\_3 (Conv2D) (None, 13, 13, 64) 4160

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max\_pooling2d\_1 (MaxPooling2 (None, 6, 6, 64) 0

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dropout\_1 (Dropout) (None, 6, 6, 64) 0

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conv2d\_4 (Conv2D) (None, 4, 4, 64) 36928

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conv2d\_5 (Conv2D) (None, 4, 4, 64) 4160

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max\_pooling2d\_2 (MaxPooling2 (None, 4, 4, 64) 0

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dropout\_2 (Dropout) (None, 4, 4, 64) 0

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flatten (Flatten) (None, 1024) 0

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dense (Dense) (None, 512) 524800

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dense\_1 (Dense) (None, 256) 131328

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dense\_2 (Dense) (None, 10) 2570

=================================================================

Total params: 724,394

Trainable params: 724,394

Non-trainable params: 0

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Model 5 :

Layer (type) Output Shape Param #

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conv2d\_6 (Conv2D) (None, 30, 30, 32) 896

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conv2d\_7 (Conv2D) (None, 30, 30, 32) 1056

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max\_pooling2d\_3 (MaxPooling2 (None, 15, 15, 32) 0

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dropout\_3 (Dropout) (None, 15, 15, 32) 0

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conv2d\_8 (Conv2D) (None, 13, 13, 64) 18496

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conv2d\_9 (Conv2D) (None, 13, 13, 64) 4160

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max\_pooling2d\_4 (MaxPooling2 (None, 6, 6, 64) 0

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dropout\_4 (Dropout) (None, 6, 6, 64) 0

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conv2d\_10 (Conv2D) (None, 4, 4, 64) 36928

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conv2d\_11 (Conv2D) (None, 4, 4, 64) 4160

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max\_pooling2d\_5 (MaxPooling2 (None, 4, 4, 64) 0

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dropout\_5 (Dropout) (None, 4, 4, 64) 0

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flatten\_1 (Flatten) (None, 1024) 0

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dense\_3 (Dense) (None, 512) 524800

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dropout\_6 (Dropout) (None, 512) 0

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dense\_4 (Dense) (None, 10) 5130

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Total params: 595,626

Trainable params: 595,626

Non-trainable params: 0

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Model 6 :

Layer (type) Output Shape Param #

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conv2d\_1 (Conv2D) (None, 32, 32, 32) 896

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activation\_1 (Activation) (None, 32, 32, 32) 0

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batch\_normalization\_1 (Batch (None, 32, 32, 32) 128

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conv2d\_2 (Conv2D) (None, 32, 32, 32) 9248

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activation\_2 (Activation) (None, 32, 32, 32) 0

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batch\_normalization\_2 (Batch (None, 32, 32, 32) 128

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max\_pooling2d\_1 (MaxPooling2 (None, 16, 16, 32) 0

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dropout\_1 (Dropout) (None, 16, 16, 32) 0

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conv2d\_3 (Conv2D) (None, 16, 16, 64) 18496

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activation\_3 (Activation) (None, 16, 16, 64) 0

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batch\_normalization\_3 (Batch (None, 16, 16, 64) 256

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conv2d\_4 (Conv2D) (None, 16, 16, 64) 36928

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activation\_4 (Activation) (None, 16, 16, 64) 0

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batch\_normalization\_4 (Batch (None, 16, 16, 64) 256

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max\_pooling2d\_2 (MaxPooling2 (None, 8, 8, 64) 0

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dropout\_2 (Dropout) (None, 8, 8, 64) 0

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conv2d\_5 (Conv2D) (None, 8, 8, 128) 73856

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activation\_5 (Activation) (None, 8, 8, 128) 0

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batch\_normalization\_5 (Batch (None, 8, 8, 128) 512

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conv2d\_6 (Conv2D) (None, 8, 8, 128) 147584

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activation\_6 (Activation) (None, 8, 8, 128) 0

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batch\_normalization\_6 (Batch (None, 8, 8, 128) 512

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max\_pooling2d\_3 (MaxPooling2 (None, 4, 4, 128) 0

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dropout\_3 (Dropout) (None, 4, 4, 128) 0

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flatten\_1 (Flatten) (None, 2048) 0

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dense\_1 (Dense) (None, 10) 20490

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Total params: 309,290

Trainable params: 308,394

Non-trainable params: 896

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