

AI61002 (DLFA) Worksheet -1

In Table-1, P1, P2, ..., P10 represents the number of parameters and F1, F2, ..., F10 represents the number of flops(operations) for the respective layers (L1,L2,...,L10).

Calculate the number of parameters and Flops for each layer of the convolutional neural network given below for an **input of size $5 \times 21 \times 21$** . The network operates in inference mode, i.e., in the software

library we set `model.eval()`. Calculate the Flops as the number of **FMA** (Fused-Multiply and Add) operations.

1

P1

(0.5 Points)

TABLE1

Layer Number	Layer	# Params	# Flops
L1	Conv2d: 32c 3w 2s 2p	P1	F1
L2	ReLU	P2	F2
L3	MaxPool2d: 2w 2s 0p	P3	F3
L4	Conv2d: 64c 3w 1s 0p	P4	F4
L5	ReLU	P5	F5
L6	MaxPool2d: 2w 2s 0p	P6	F6
L7	Flatten	P7	F7
L8	Linear: 256 \rightarrow 128	P8	F8
L9	ReLU	P9	F9
L10	Linear: 128 \rightarrow 10	P10	F10

2

F1
(0.5 Points)

211968

3

P2
(0.5 Points)

0

4

F2
(0.5 Points)

9216

5

P3
(0.5 Points)

0

6

F3
(0.5 Points)

3456

7

P4
(0.5 Points)

18496

8

F4
(0.5 Points)

295936

9

P5
(0.5 Points)

0

10

F5
(0.5 Points)

2048

11

P6
(0.5 Points)

0

12

F6
(0.5 Points)

768

13

P7
(0.5 Points)

0

14

F7
(0.5 Points)

0

15

P8
(0.5 Points)

32896

16

F8
(0.5 Points)

32896

17

P9
(0.5 Points)

0

18

F9
(0.5 Points)

256

19

P10
(0.5 Points)

1290

20

F10
(0.5 Points)

1290

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