

	output_shape	input buffer size	output buffer size	RAM need	#macs	#params
Conv2D(32, (3,3), activation='relu', input_shape=(100, 100, 98x98x32		120,000	1,229,312	1,349,312	8,297,856	896
MaxPooling2D(2, 2),	49x49x32	1,229,312	307,328	1,536,640	0	0
Conv2D(64, (3,3), activation='relu'),	47x47x64	307,328	565,504	872,832	40,716,288	18,496
MaxPooling2D(2,2),	23x23x64	565,504	135,424	700,928	0	0
Conv2D(128, (3,3), activation='relu'),	21x21x128	135,424	225,792	361,216	32,514,048	73,856
MaxPooling2D(2,2),	10x10x128	225,792	51,200	276,992	0	0
Conv2D(256, (3,3), activation='relu'),	8x8x256	51,200	65,536	116,736	18,874,368	295,168
MaxPooling2D(2,2),	4x4x256	65,536	16,384	81,920	0	0
Flatten()	4096	16,384	16,384	32,768	0	0
Dense(512, activation='relu')	512	16,384	2,048	18,432	2,097,152	2,097,664
Dense(1, activation='sigmoid')	1	2,048	4	2,052	512	513

## # Params

$(\text{kernel\_height} * \text{kernel\_width} * \text{input\_channels} + 1) * \text{output\_channels}$  (+1 for bias for each output channel).

## #macs

$\text{kernel\_height} * \text{kernel\_width} * \text{input\_channels} * \text{output\_channels} * \text{output\_height} * \text{output\_width}$

From ChatGPT:

For MaxPooling layers, the calculations for `#macs` (Multiply-Accumulate operations) and `#params` (parameters) are different than Conv2D layers.

### 1. #macs (Multiply-Accumulate Operations) for MaxPooling:

MaxPooling does not involve multiplication or addition operations in the same way as convolution. Instead, for each window (say 2×2 for MaxPooling2D(2,2)), it picks the maximum value. Thus, it doesn't technically have any MACs associated with it. Some people might count each selection of a maximum value as one operation, but that's not a multiply-accumulate. So for standard calculations, the `#macs` for MaxPooling layers is usually considered as 0.

### 2. #params (Parameters) for MaxPooling:

MaxPooling layers do not have any trainable parameters. Their functionality is fixed: they take the maximum of a given window. Thus, the `#params` for MaxPooling layers is always 0.

To summarize:

- MaxPooling: `#macs` = 0 and `#params` = 0.