Model Training (Frozen CNN)

Training Accuracy

Training Loss
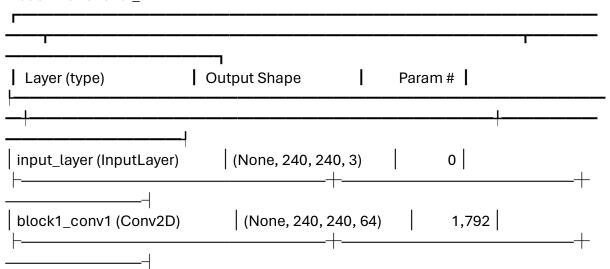
DOĞRULUK ORANI: **%69.11**

1085
686
Number of example is : 1771
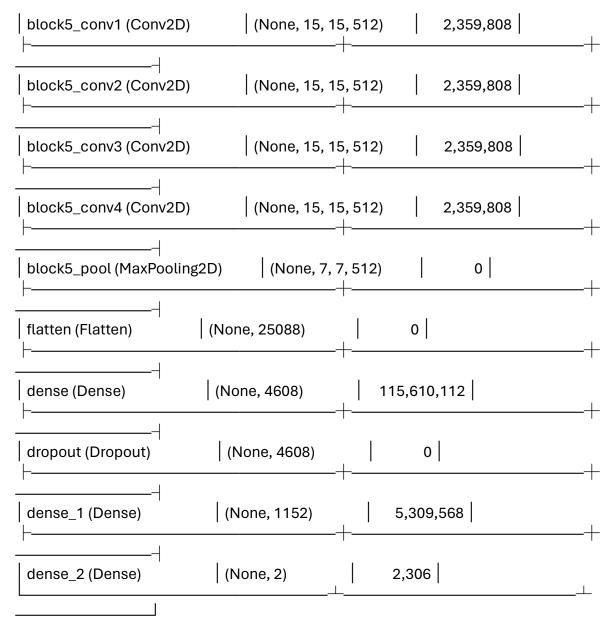X SHAPE is : (1771, 240, 240, 3)
y SHAPE is : (1771,)
Found 960 images belonging to 2 classes.
Found 206 images belonging to 2 classes.
Found 204 images belonging to 2 classes.
{0: 'nontumorous', 1: 'tumorous'}
Model: "functional_1"

Layer (type)	Output Shape	Param #
input_layer (InputLayer)	(None, 240, 240, 3)	0
block1_conv1 (Conv2D)	(None, 240, 240, 64)	1,792

block1_conv2 (Conv2D)	(None, 240, 240, 64)	36,928
block1_pool (MaxPooling2D)	(None, 120, 120, 64)	0
block2_conv1 (Conv2D)	(None, 120, 120, 128)	73,856
block2_conv2 (Conv2D)	(None, 120, 120, 128)	147,584
block2_pool (MaxPooling2D)	(None, 60, 60, 128)	0
block3_conv1 (Conv2D)	(None, 60, 60, 256)	295,168
block3_conv2 (Conv2D)	(None, 60, 60, 256)	590,080
block3_conv3 (Conv2D)	(None, 60, 60, 256)	590,080
block3_conv4 (Conv2D)	(None, 60, 60, 256)	590,080
block3_pool (MaxPooling2D)	(None, 30, 30, 256)	0
block4_conv1 (Conv2D)	(None, 30, 30, 512)	1,180,160
block4_conv2 (Conv2D)	(None, 30, 30, 512)	2,359,808
block4_conv3 (Conv2D)	(None, 30, 30, 512)	2,359,808
block4_conv4 (Conv2D)	(None, 30, 30, 512)	2,359,808
block4_pool (MaxPooling2D)	(None, 15, 15, 512)	0

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| block5_conv1 (Conv2D)      | (None, 15, 15, 512)  |      2,359,808 |

| block5_conv2 (Conv2D)      | (None, 15, 15, 512)  |      2,359,808 |

| block5_conv3 (Conv2D)      | (None, 15, 15, 512)  |      2,359,808 |

| block5_conv4 (Conv2D)      | (None, 15, 15, 512)  |      2,359,808 |

| block5_pool (MaxPooling2D) | (None, 7, 7, 512)    |              0 |

| flatten (Flatten)          | (None, 25088)        |              0 |

| dense (Dense)              | (None, 4608)         |    115,610,112 |

| dropout (Dropout)          | (None, 4608)         |              0 |

| dense_1 (Dense)            | (None, 1152)         |      5,309,568 |

| dense_2 (Dense)            | (None, 2)            |          2,306 |
```

 Total params: 140,946,370 (537.67 MB)
 Trainable params: 120,921,986 (461.28 MB)
 Non-trainable params: 20,024,384 (76.39 MB)
/Users/emircantanyildiz/Library/Python/3.9/lib/python/site-packages/keras/src/optimizers/base_optimizer.py:34: UserWarning: Argument `decay` is no longer supported and will be ignored.
  warnings.warn(
Epoch 1/2
/Users/emircantanyildiz/Library/Python/3.9/lib/python/site-packages/keras/src/trainers/data_adapters/py_dataset_adapter.py:122: UserWarning: Your `PyDataset` class should call `super().__init__(**kwargs)` in its constructor. `**kwargs` can include `workers`, `use_multiprocessing`, `max_queue_size`. Do not pass these arguments to `fit()`, as they will be ignored.
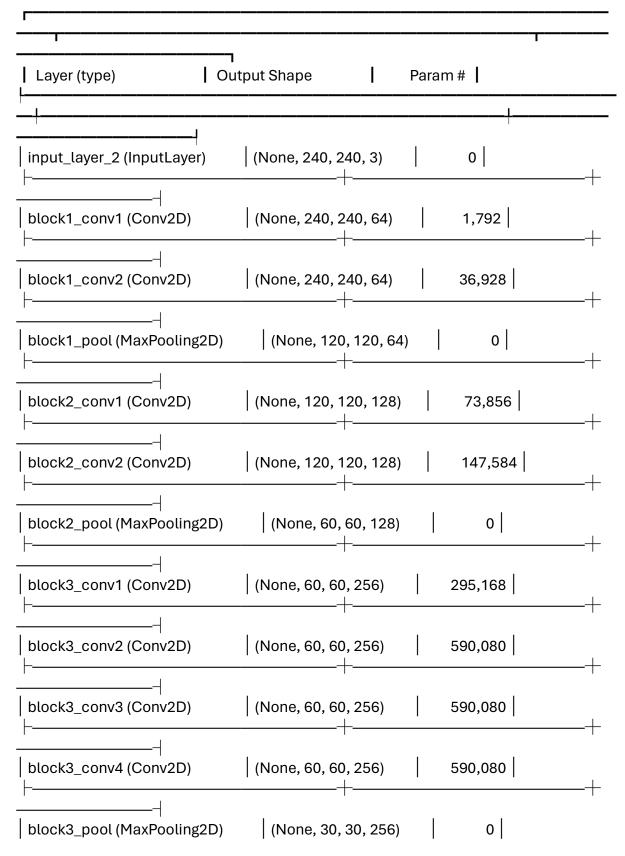 self._warn_if_super_not_called()
10/10 ━━━━━━━━━━━━━━━━━━━━━━━━━━━━ 0s 17s/step - accuracy: 0.5759 - loss: 0.6999

Epoch 1: val_loss improved from inf to 0.72186, saving model to model.keras
/Users/emircantanyildiz/Library/Python/3.9/lib/python/site-packages/keras/src/callbacks/callback_list.py:97: UserWarning: Learning rate reduction is conditioned on metric `val_accuarcy` which is not available. Available metrics are: accuracy,loss,val_accuracy,val_loss,learning_rate.
  callback.on_epoch_end(epoch, logs)
10/10 ───────────────────────── 298s 30s/step - accuracy: 0.5725 - loss: 0.7014 - val_accuracy: 0.5245 - val_loss: 0.7219 - learning_rate: 1.0000e-04
Epoch 2/2
10/10 ───────────────────────── 0s 19s/step - accuracy: 0.4368 - loss: 0.7440
Epoch 2: val_loss improved from 0.72186 to 0.69737, saving model to model.keras
10/10 ───────────────────────── 303s 31s/step - accuracy: 0.4420 - loss: 0.7413 - val_accuracy: 0.5000 - val_loss: 0.6974 - learning_rate: 1.0000e-04
7/7 ───────────────────────── 100s 14s/step - accuracy: 0.5011 - loss: 0.6896
/Users/emircantanyildiz/Library/Python/3.9/lib/python/site-packages/keras/src/trainers/data_adapters/py_dataset_adapter.py:122: UserWarning: Your `PyDataset` class should call `super().__init__(**kwargs)` in its constructor. `**kwargs` can include `workers`, `use_multiprocessing`, `max_queue_size`. Do not pass these arguments to `fit()`, as they will be ignored.
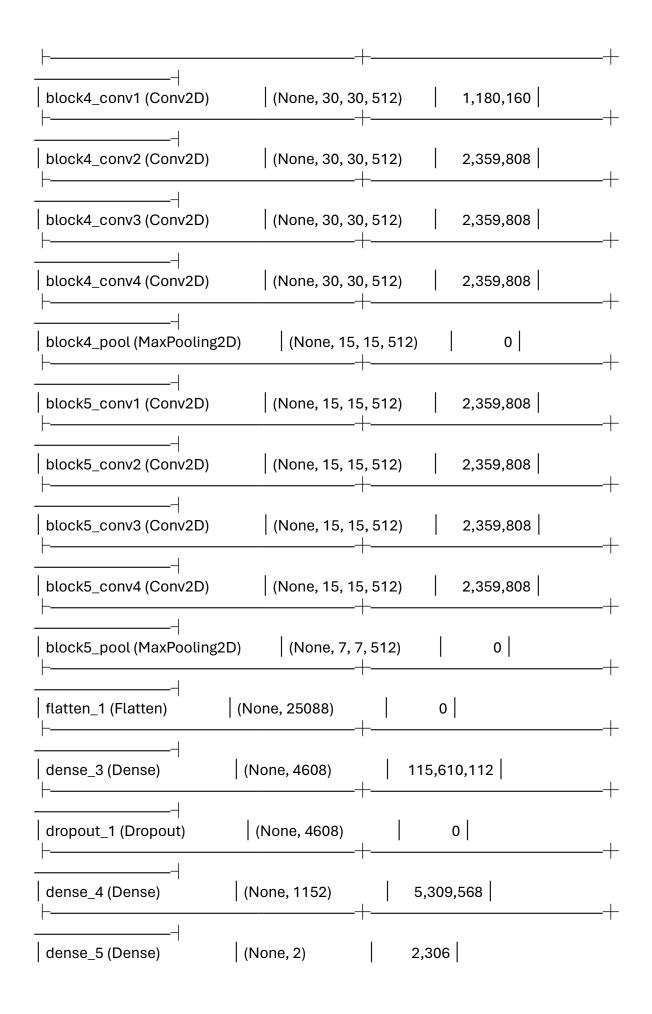 self._warn_if_super_not_called()
7/7 ───────────────────────── 91s 13s/step - accuracy: 0.5520 - loss: 0.6868
Validation Loss: 0.6908127069473267
Validation Acc: 0.5098039507865906
Testing Loss: 0.6995998024940491
Testing Acc: 0.5388349294662476
  7/206 ───────────────────────── 47:23 14s/step2024-03-24 22:41:18.133120: W tensorflow/core/framework/local_rendezvous.cc:404] Local rendezvous is aborting with status: OUT_OF_RANGE: End of sequence
/Applications/Xcode.app/Contents/Developer/Library/Frameworks/Python3.framework/Versions/3.9/lib/python3.9/contextlib.py:135: UserWarning: Your input ran out of data; interrupting training. Make sure that your dataset or generator can generate at least `steps_per_epoch * epochs` batches. You may need to use the `.repeat()` function when building your dataset.
  self.gen.throw(type, value, traceback)
206/206 ───────────────────────── 102s 418ms/step
['input_layer_1', 'block1_conv1', 'block1_conv2', 'block1_pool', 'block2_conv1', 'block2_conv2', 'block2_pool', 'block3_conv1', 'block3_conv2', 'block3_conv3', 'block3_conv4', 'block3_pool', 'block4_conv1', 'block4_conv2', 'block4_conv3', 'block4_conv4', 'block4_pool', 'block5_conv1', 'block5_conv2', 'block5_conv3', 'block5_conv4', 'block5_pool']
['input_layer_2', 'block1_conv1', 'block1_conv2', 'block1_pool', 'block2_conv1', 'block2_conv2', 'block2_pool', 'block3_conv1', 'block3_conv2', 'block3_conv3', 'block3_conv4', 'block3_pool', 'block4_conv1', 'block4_conv2', 'block4_conv3',

'block4_conv4', 'block4_pool', 'block5_conv1', 'block5_conv2', 'block5_conv3', 'block5_conv4', 'block5_pool']
Model: "functional_3"

Layer (type)	Output Shape	Param #
input_layer_2 (InputLayer)	(None, 240, 240, 3)	0
block1_conv1 (Conv2D)	(None, 240, 240, 64)	1,792
block1_conv2 (Conv2D)	(None, 240, 240, 64)	36,928
block1_pool (MaxPooling2D)	(None, 120, 120, 64)	0
block2_conv1 (Conv2D)	(None, 120, 120, 128)	73,856
block2_conv2 (Conv2D)	(None, 120, 120, 128)	147,584
block2_pool (MaxPooling2D)	(None, 60, 60, 128)	0
block3_conv1 (Conv2D)	(None, 60, 60, 256)	295,168
block3_conv2 (Conv2D)	(None, 60, 60, 256)	590,080
block3_conv3 (Conv2D)	(None, 60, 60, 256)	590,080
block3_conv4 (Conv2D)	(None, 60, 60, 256)	590,080
block3_pool (MaxPooling2D)	(None, 30, 30, 256)	0

Layer (type)	Output Shape	Param #
block4_conv1 (Conv2D)	(None, 30, 30, 512)	1,180,160
block4_conv2 (Conv2D)	(None, 30, 30, 512)	2,359,808
block4_conv3 (Conv2D)	(None, 30, 30, 512)	2,359,808
block4_conv4 (Conv2D)	(None, 30, 30, 512)	2,359,808
block4_pool (MaxPooling2D)	(None, 15, 15, 512)	0
block5_conv1 (Conv2D)	(None, 15, 15, 512)	2,359,808
block5_conv2 (Conv2D)	(None, 15, 15, 512)	2,359,808
block5_conv3 (Conv2D)	(None, 15, 15, 512)	2,359,808
block5_conv4 (Conv2D)	(None, 15, 15, 512)	2,359,808
block5_pool (MaxPooling2D)	(None, 7, 7, 512)	0
flatten_1 (Flatten)	(None, 25088)	0
dense_3 (Dense)	(None, 4608)	115,610,112
dropout_1 (Dropout)	(None, 4608)	0
dense_4 (Dense)	(None, 1152)	5,309,568
dense_5 (Dense)	(None, 2)	2,306

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 Total params: 140,946,370 (537.67 MB)
 Trainable params: 125,641,602 (479.28 MB)
 Non-trainable params: 15,304,768 (58.38 MB)
None
/Users/emircantanyildiz/Library/Python/3.9/lib/python/site-
packages/keras/src/optimizers/base_optimizer.py:34: UserWarning: Argument `decay`
is no longer supported and will be ignored.
  warnings.warn(
Epoch 1/2
10/10 ──────────────────────────────── 0s 23s/step - accuracy: 0.5291 -
loss: 0.7126
Epoch 1: val_loss did not improve from 0.69737
/Users/emircantanyildiz/Library/Python/3.9/lib/python/site-
packages/keras/src/callbacks/callback_list.py:97: UserWarning: Learning rate reduction
is conditioned on metric `val_accuarcy` which is not available. Available metrics are:
accuracy,loss,val_accuracy,val_loss,learning_rate.
  callback.on_epoch_end(epoch, logs)
10/10 ──────────────────────────────── 357s 37s/step - accuracy: 0.5268 -
loss: 0.7135 - val_accuracy: 0.5245 - val_loss: 0.7022 - learning_rate: 1.0000e-04
Epoch 2/2
10/10 ──────────────────────────────── 0s 18s/step - accuracy: 0.5368 -
loss: 0.7279
Epoch 2: val_loss improved from 0.69737 to 0.65289, saving model to model.keras
10/10 ──────────────────────────────── 307s 31s/step - accuracy: 0.5377 -
loss: 0.7260 - val_accuracy: 0.6275 - val_loss: 0.6529 - learning_rate: 1.0000e-04
7/7 ──────────────────────────────── 123s 17s/step - accuracy: 0.6111 -
loss: 0.6535
7/7 ──────────────────────────────── 100s 14s/step - accuracy: 0.5605 -
loss: 0.6654
['input_layer_3', 'block1_conv1', 'block1_conv2', 'block1_pool', 'block2_conv1',
'block2_conv2', 'block2_pool', 'block3_conv1', 'block3_conv2', 'block3_conv3',
'block3_conv4', 'block3_pool', 'block4_conv1', 'block4_conv2', 'block4_conv3',
'block4_conv4', 'block4_pool', 'block5_conv1', 'block5_conv2', 'block5_conv3',
'block5_conv4', 'block5_pool']
/Users/emircantanyildiz/Library/Python/3.9/lib/python/site-
packages/keras/src/optimizers/base_optimizer.py:34: UserWarning: Argument `decay`
is no longer supported and will be ignored.
  warnings.warn(
Model: "functional_5"
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│ Layer (type)          │ Output Shape        │    Param #        │
```
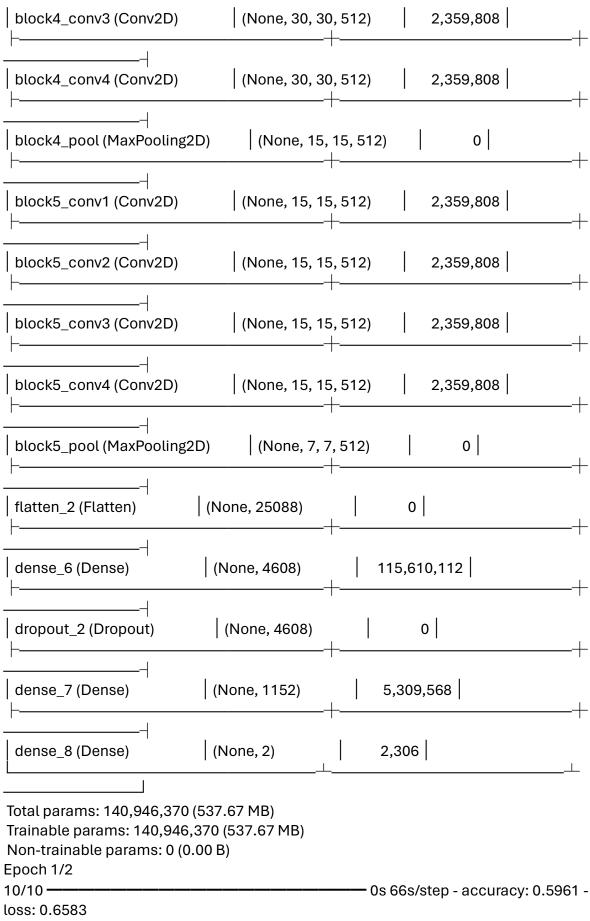
input_layer_3 (InputLayer)	(None, 240, 240, 3)	0
block1_conv1 (Conv2D)	(None, 240, 240, 64)	1,792
block1_conv2 (Conv2D)	(None, 240, 240, 64)	36,928
block1_pool (MaxPooling2D)	(None, 120, 120, 64)	0
block2_conv1 (Conv2D)	(None, 120, 120, 128)	73,856
block2_conv2 (Conv2D)	(None, 120, 120, 128)	147,584
block2_pool (MaxPooling2D)	(None, 60, 60, 128)	0
block3_conv1 (Conv2D)	(None, 60, 60, 256)	295,168
block3_conv2 (Conv2D)	(None, 60, 60, 256)	590,080
block3_conv3 (Conv2D)	(None, 60, 60, 256)	590,080
block3_conv4 (Conv2D)	(None, 60, 60, 256)	590,080
block3_pool (MaxPooling2D)	(None, 30, 30, 256)	0
block4_conv1 (Conv2D)	(None, 30, 30, 512)	1,180,160
block4_conv2 (Conv2D)	(None, 30, 30, 512)	2,359,808

block4_conv3 (Conv2D)	(None, 30, 30, 512)	2,359,808
block4_conv4 (Conv2D)	(None, 30, 30, 512)	2,359,808
block4_pool (MaxPooling2D)	(None, 15, 15, 512)	0
block5_conv1 (Conv2D)	(None, 15, 15, 512)	2,359,808
block5_conv2 (Conv2D)	(None, 15, 15, 512)	2,359,808
block5_conv3 (Conv2D)	(None, 15, 15, 512)	2,359,808
block5_conv4 (Conv2D)	(None, 15, 15, 512)	2,359,808
block5_pool (MaxPooling2D)	(None, 7, 7, 512)	0
flatten_2 (Flatten)	(None, 25088)	0
dense_6 (Dense)	(None, 4608)	115,610,112
dropout_2 (Dropout)	(None, 4608)	0
dense_7 (Dense)	(None, 1152)	5,309,568
dense_8 (Dense)	(None, 2)	2,306

Total params: 140,946,370 (537.67 MB)
Trainable params: 140,946,370 (537.67 MB)
Non-trainable params: 0 (0.00 B)
Epoch 1/2
10/10 ━━━━━━━━━━━━━━━━━━━━ 0s 66s/step - accuracy: 0.5961 - loss: 0.6583
Epoch 1: val_loss improved from 0.65289 to 0.62913, saving model to model.keras

/Users/emircantanyildiz/Library/Python/3.9/lib/python/site-packages/keras/src/callbacks/callback_list.py:97: UserWarning: Learning rate reduction is conditioned on metric `val_accuarcy` which is not available. Available metrics are: accuracy,loss,val_accuracy,val_loss,learning_rate.
  callback.on_epoch_end(epoch, logs)
10/10 ──────────────────────── 771s 77s/step - accuracy: 0.5939 - loss: 0.6596 - val_accuracy: 0.6863 - val_loss: 0.6291 - learning_rate: 1.0000e-04
Epoch 2/2
10/10 ──────────────────────── 0s 49s/step - accuracy: 0.6011 - loss: 0.6700
Epoch 2: val_loss did not improve from 0.62913
10/10 ──────────────────────── 583s 59s/step - accuracy: 0.6024 - loss: 0.6697 - val_accuracy: 0.6520 - val_loss: 0.6328 - learning_rate: 1.0000e-04
7/7 ──────────────────────── 85s 12s/step - accuracy: 0.6950 - loss: 0.6211
7/7 ──────────────────────── 87s 12s/step - accuracy: 0.6976 - loss: 0.6218
Validation Loss: 0.6197931170463562
Validation Acc: 0.6911764740943909
Testing Loss: 0.6204794049263
Testing Acc: 0.6796116232872009

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