Processing Train Data: 100%			4762/4762 [01:12<00:00, 65.25it/s]
Processing Validation Data: 100%			1191/1191 [00:04<00:00, 268.55it/s]
Processing Test Data: 100%			1489/1489 [00:05<00:00, 267.56it/s]
/home/ubuntu/.local/lib/python3.12/site	-packages/keras/src/layers/con	volutional/base_co	nv.py:107: UserWarning: Do not pass an `input_shape`/`input_dim` argument to a layer
. When using Sequential models, prefer	using an `Input(shape)` object	as the first laye	r in the model instead.
super()init(activity_regularizer	=activity_regularizer, **kwarg	s)	
W0000 00:00:1733699923.554005 46231 g	pu_device.cc:2344] Cannot dlop	en some GPU librar	ies. Please make sure the missing libraries mentioned above are installed properly i
f you would like to use GPU. Follow the	guide at https://www.tensorfl	ow.org/install/gpu	for how to download and setup the required libraries for your platform.
Skipping registering GPU devices			
Model: "sequential"			
Layer (type)	Output Shape	Param #	
conv2d (Conv2D)	(None, 64, 128, 32)	320	
hatch normalization	(None, 64, 128, 32)	128	

	Layer (type)	оосрос знаре	rai'aii #
	conv2d (Conv2D)	(None, 64, 128, 32)	320
	batch_normalization (BatchNormalization)	(None, 64, 128, 32)	128
	max_pooling2d (MaxPooling2D)	(None, 32, 64, 32)	0
	conv2d_1 (Conv2D)	(None, 32, 64, 64)	18,496
	batch_normalization_1 (BatchNormalization)	(None, 32, 64, 64)	256
	max_pooling2d_1 (MaxPooling2D)	(None, 16, 32, 64)	0
_			

max_pooling2d_1 (MaxPooling2D)	(None, 16, 32, 64)	0
conv2d_2 (Conv2D)	(None, 16, 32, 128)	73,856
batch_normalization_2 (BatchNormalization)	(None, 16, 32, 128)	512
max_pooling2d_2 (MaxPooling2D)	(None, 8, 16, 128)	0
conv2d_3 (Conv2D)	(None, 8, 16, 256)	295,168
batch_normalization_3 (BatchNormalization)	(None, 8, 16, 256)	1,024
max_pooling2d_3 (MaxPooling2D)	(None, 4, 8, 256)	9
conv2d_4 (Conv2D)	(None, 4, 8, 512)	1,180,160
batch_normalization_4 (BatchNormalization)	(None, 4, 8, 512)	2,048
max_pooling2d_4 (MaxPooling2D)	(None, 2, 4, 512)	0
conv2d_5 (Conv2D)	(None, 2, 4, 512)	2,359,808
batch_normalization_5 (BatchNormalization)	(None, 2, 4, 512)	2,048

flatten (Flatten)		(None, 4096)	0					
dense (Dense)		(None, 1024)	4,195,328					
dense_1 (Dense)		(None, 512)	524,800					
dense_2 (Dense)		(None, 6)	3,078					
Total params: 8,657,030 (33.02 MB) Trainable params: 8,657,030 (33.02 MB) Non-trainable params: 3,698 (11.75 KB) Epoch 1/30 298/298 89s 288ms/step - accuracy: 0.3226 - loss: 2.1120 - val_accuracy: 0.1713 - val_loss: 9.8709 Epoch 2/30 298/298 85s 287ms/step - accuracy: 0.4015 - loss: 1.4728 - val_accuracy: 0.3728 - val_loss: 1.8671 Epoch 3/30 298/298 86s 289ms/step - accuracy: 0.4515 - loss: 1.4031 - val_accuracy: 0.3661 - val_loss: 1.7996 Epoch 4/30 298/298 142s 287ms/step - accuracy: 0.4923 - loss: 1.2696 - val_accuracy: 0.2544 - val_loss: 2.8506 Epoch 5/30 298/298 85s 284ms/step - accuracy: 0.5506 - loss: 1.1939 - val_accuracy: 0.4517 - val_loss: 1.4200								
Epoch 6/30 298/298 — 85s 287ms/step - accuracy: 0.5657 - loss: 1.1247 - val_accuracy: 0.4601 - val_loss: 1.3819 Epoch 7/30 298/298 — 144s 295ms/step - accuracy: 0.6057 - loss: 1.0518 - val_accuracy: 0.5130 - val_loss: 1.2513 Epoch 8/30 298/298 — 85s 285ms/step - accuracy: 0.6115 - loss: 0.9775 - val_accuracy: 0.2964 - val_loss: 2.5031								

```
Epoch 8/30
298/298 -
                            85s 285ms/step - accuracy: 0.6115 - loss: 0.9775 - val_accuracy: 0.2964 - val_loss: 2.5031
Epoch 9/30
298/298 -
                            85s 286ms/step - accuracy: 0.6528 - loss: 0.9263 - val_accuracy: 0.4736 - val_loss: 1.4070
Epoch 10/30
298/298
                            143s 289ms/step - accuracy: 0.6877 - loss: 0.8184 - val_accuracy: 0.4828 - val_loss: 1.6401
298/298 -
                            86s 289ms/step - accuracy: 0.7271 - loss: 0.7225 - val_accuracy: 0.5071 - val_loss: 1.5933
Epoch 12/30
298/298 -
                            86s 288ms/step - accuracy: 0.7742 - loss: 0.6316 - val_accuracy: 0.4861 - val_loss: 1.7559
                            142s 288ms/step - accuracy: 0.7966 - loss: 0.5632 - val_accuracy: 0.4039 - val_loss: 2.2119
298/298
Epoch 14/30
298/298
                            86s 290ms/step - accuracy: 0.8445 - loss: 0.4330 - val_accuracy: 0.5659 - val_loss: 1.3311
Epoch 15/30
298/298
                             86s 288ms/step - accuracy: 0.8721 - loss: 0.3626 - val_accuracy: 0.5357 - val_loss: 1.6521
Epoch 16/30
298/298
                            85s 286ms/step - accuracy: 0.8868 - loss: 0.3070 - val_accuracy: 0.5793 - val_loss: 1.5801
Epoch 17/30
298/298 -
                            86s 290ms/step - accuracy: 0.9165 - loss: 0.2501 - val_accuracy: 0.5659 - val_loss: 1.6999
Epoch 18/30
298/298 -
                            87s 293ms/step - accuracy: 0.9241 - loss: 0.2069 - val_accuracy: 0.4996 - val_loss: 1.9270
Epoch 19/30
298/298
                            84s 281ms/step - accuracy: 0.9308 - loss: 0.2074 - val_accuracy: 0.5348 - val_loss: 1.7734
Epoch 20/30
                            141s 278ms/step - accuracy: 0.9511 - loss: 0.1497 - val_accuracy: 0.5466 - val_loss: 1.9643
298/298
Epoch 21/30
                             142s 278ms/step - accuracy: 0.9438 - loss: 0.1640 - val_accuracy: 0.5785 - val_loss: 1.7777
298/298 -
```

```
298/298
                             144s 284ms/step - accuracy: 0.9710 - loss: 0.0916 - val_accuracy: 0.5466 - val_loss: 2.3413
Epoch 23/30
                            - 83s 280ms/step - accuracy: 0.9636 - loss: 0.1091 - val_accuracy: 0.5777 - val_loss: 1.8157
298/298 -
Epoch 24/30
298/298 -
                           — <mark>83s</mark> 279ms/step - accuracy: 0.9608 - loss: 0.1178 - val_accuracy: 0.5264 - val_loss: 2.3004
Epoch 25/30
298/298 -
                            - 82s 274ms/step - accuracy: 0.9607 - loss: 0.1266 - val_accuracy: 0.5819 - val_loss: 2.1917
Epoch 26/30
298/298 -
                           — 81s 272ms/step - accuracy: 0.9735 - loss: 0.0826 - val_accuracy: 0.5768 - val_loss: 2.0785
298/298 -
                           – 84s 278ms/step - accuracy: 0.9645 - loss: 0.1010 - val_accuracy: 0.5718 - val_loss: 1.9882
Epoch 28/30
                           — 81s 272ms/step - accuracy: 0.9681 - loss: 0.0899 - val_accuracy: 0.4139 - val_loss: 4.2563
298/298 -
Epoch 29/30
298/298 -
                           — 83s 278ms/step - accuracy: 0.9762 - loss: 0.0868 - val_accuracy: 0.5500 - val_loss: 2.4322
Epoch 30/30
298/298 —
                           — 82s 274ms/step - accuracy: 0.9740 - loss: 0.0741 - val_accuracy: 0.6037 - val_loss: 2.2325
47/47 —
                         - 5s 96ms/step
47/47 -
```