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"metadata": {},

"outputs": [],

"source": [

"from tensorflow.keras.models import Sequential\n",

"from tensorflow.keras.layers import Dense\n",

"from tensorflow.keras.layers import Convolution2D\n",

"from tensorflow.keras.layers import MaxPooling2D\n",

"from tensorflow.keras.layers import Flatten"

]

},

{

"cell\_type": "code",

"execution\_count": 2,

"metadata": {},

"outputs": [

{

"name": "stderr",

"output\_type": "stream",

"text": [

"Using TensorFlow backend.\n"

]

}

],

"source": [

"from keras.preprocessing.image import ImageDataGenerator\n",

"train\_datagen = ImageDataGenerator(rescale = 1./255,shear\_range = 0.2,zoom\_range = 0.2,horizontal\_flip = True)\n",

"test\_datagen = ImageDataGenerator(rescale = 1./255)"

]

},

{

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"output\_type": "stream",

"text": [

"Found 100 images belonging to 5 classes.\n",

"Found 50 images belonging to 5 classes.\n"

]

}

],

"source": [

"x\_train = train\_datagen.flow\_from\_directory(r\"D:\\externship files\\things data\\trainset\",target\_size = (64,64),batch\_size = 32,class\_mode = \"categorical\")\n",

"x\_test = test\_datagen.flow\_from\_directory(r\"D:\\externship files\\things data\\testset\",target\_size = (64,64),batch\_size = 32,class\_mode = \"categorical\")"

]

},

{

"cell\_type": "code",

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"outputs": [],

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"model = Sequential()"

]

},

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"execution\_count": 5,

"metadata": {},

"outputs": [

{

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"output\_type": "stream",

"text": [

"WARNING:tensorflow:From C:\\Users\\suman\\AppData\\Local\\Continuum\\anaconda3\\lib\\site-packages\\tensorflow\\python\\ops\\init\_ops.py:1251: calling VarianceScaling.\_\_init\_\_ (from tensorflow.python.ops.init\_ops) with dtype is deprecated and will be removed in a future version.\n",

"Instructions for updating:\n",

"Call initializer instance with the dtype argument instead of passing it to the constructor\n"

]

}

],

"source": [

"model.add(Convolution2D(32,(3,3),input\_shape = (64,64,3),activation = \"relu\"))"

]

},

{

"cell\_type": "code",

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"outputs": [],

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"model.add(MaxPooling2D(2,2))"

]

},

{

"cell\_type": "code",

"execution\_count": 7,

"metadata": {},

"outputs": [],

"source": [

"model.add(Flatten())"

]

},

{

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"execution\_count": 8,

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"output\_type": "stream",

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"WARNING:tensorflow:From C:\\Users\\suman\\AppData\\Local\\Continuum\\anaconda3\\lib\\site-packages\\tensorflow\\python\\keras\\initializers.py:119: calling RandomUniform.\_\_init\_\_ (from tensorflow.python.ops.init\_ops) with dtype is deprecated and will be removed in a future version.\n",

"Instructions for updating:\n",

"Call initializer instance with the dtype argument instead of passing it to the constructor\n"

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"model.add(Dense(units = 512,activation = \"relu\",kernel\_initializer = \"random\_uniform\"))"

]

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"model.add(Dense(units = 5,activation = \"softmax\",kernel\_initializer = \"random\_uniform\"))"

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"model.compile(\"sgd\",loss = \"categorical\_crossentropy\",metrics = [\"accuracy\"])"

]

},

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"output\_type": "stream",

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"Epoch 1/30\n",

"47/47 [==============================] - 5s 111ms/step - loss: 1.5436 - acc: 0.3185 - val\_loss: 1.6356 - val\_acc: 0.2400\n",

"Epoch 2/30\n",

"47/47 [==============================] - 5s 112ms/step - loss: 1.3411 - acc: 0.5217 - val\_loss: 1.2872 - val\_acc: 0.5800\n",

"Epoch 3/30\n",

"47/47 [==============================] - 5s 108ms/step - loss: 1.1614 - acc: 0.6002 - val\_loss: 1.2251 - val\_acc: 0.5200\n",

"Epoch 4/30\n",

"47/47 [==============================] - 5s 109ms/step - loss: 0.9646 - acc: 0.6695 - val\_loss: 1.1527 - val\_acc: 0.5200\n",

"Epoch 5/30\n",

"47/47 [==============================] - 5s 106ms/step - loss: 0.9507 - acc: 0.6935 - val\_loss: 1.1263 - val\_acc: 0.5200\n",

"Epoch 6/30\n",

"47/47 [==============================] - 5s 113ms/step - loss: 0.8162 - acc: 0.7303 - val\_loss: 1.4945 - val\_acc: 0.4000\n",

"Epoch 7/30\n",

"47/47 [==============================] - 5s 109ms/step - loss: 0.7201 - acc: 0.7525 - val\_loss: 0.9986 - val\_acc: 0.6000\n",

"Epoch 8/30\n",

"47/47 [==============================] - 5s 112ms/step - loss: 0.5592 - acc: 0.8031 - val\_loss: 1.0468 - val\_acc: 0.6400\n",

"Epoch 9/30\n",

"47/47 [==============================] - 5s 107ms/step - loss: 0.4509 - acc: 0.8425 - val\_loss: 0.9774 - val\_acc: 0.6200\n",

"Epoch 10/30\n",

"47/47 [==============================] - 5s 112ms/step - loss: 0.4710 - acc: 0.8420 - val\_loss: 1.0148 - val\_acc: 0.6200\n",

"Epoch 11/30\n",

"47/47 [==============================] - 5s 105ms/step - loss: 0.3878 - acc: 0.8632 - val\_loss: 1.0529 - val\_acc: 0.6200\n",

"Epoch 12/30\n",

"47/47 [==============================] - 5s 110ms/step - loss: 0.2956 - acc: 0.9114 - val\_loss: 1.0234 - val\_acc: 0.6400\n",

"Epoch 13/30\n",

"47/47 [==============================] - 5s 113ms/step - loss: 0.2609 - acc: 0.9324 - val\_loss: 1.0925 - val\_acc: 0.6600\n",

"Epoch 14/30\n",

"47/47 [==============================] - 5s 109ms/step - loss: 0.2730 - acc: 0.9323 - val\_loss: 1.0547 - val\_acc: 0.6200\n",

"Epoch 15/30\n",

"47/47 [==============================] - 5s 110ms/step - loss: 0.1585 - acc: 0.9735 - val\_loss: 1.1564 - val\_acc: 0.6200\n",

"Epoch 16/30\n",

"47/47 [==============================] - 5s 109ms/step - loss: 0.1969 - acc: 0.9478 - val\_loss: 1.1102 - val\_acc: 0.6200\n",

"Epoch 17/30\n",

"47/47 [==============================] - 5s 109ms/step - loss: 0.1011 - acc: 0.9816 - val\_loss: 1.2107 - val\_acc: 0.6200\n",

"Epoch 18/30\n",

"47/47 [==============================] - 6s 127ms/step - loss: 0.4734 - acc: 0.9149 - val\_loss: 1.0614 - val\_acc: 0.6000\n",

"Epoch 19/30\n",

"47/47 [==============================] - 6s 138ms/step - loss: 0.1399 - acc: 0.9824 - val\_loss: 1.1382 - val\_acc: 0.6000\n",

"Epoch 20/30\n",

"47/47 [==============================] - 6s 131ms/step - loss: 0.1192 - acc: 0.9769 - val\_loss: 1.2601 - val\_acc: 0.6200\n",

"Epoch 21/30\n",

"47/47 [==============================] - 6s 127ms/step - loss: 0.0616 - acc: 0.9932 - val\_loss: 1.2500 - val\_acc: 0.6200\n",

"Epoch 22/30\n",

"47/47 [==============================] - 5s 111ms/step - loss: 0.0440 - acc: 0.9991 - val\_loss: 1.3605 - val\_acc: 0.6400\n",

"Epoch 23/30\n",

"47/47 [==============================] - 5s 106ms/step - loss: 0.0729 - acc: 0.9854 - val\_loss: 1.3251 - val\_acc: 0.6200\n",

"Epoch 24/30\n",

"47/47 [==============================] - 5s 110ms/step - loss: 0.0480 - acc: 0.9967 - val\_loss: 1.4220 - val\_acc: 0.6400\n",

"Epoch 25/30\n",

"47/47 [==============================] - 5s 110ms/step - loss: 0.0338 - acc: 0.9983 - val\_loss: 1.3621 - val\_acc: 0.6200\n",

"Epoch 26/30\n",

"47/47 [==============================] - 6s 118ms/step - loss: 0.0776 - acc: 0.9846 - val\_loss: 1.4100 - val\_acc: 0.6400\n",

"Epoch 27/30\n",

"47/47 [==============================] - 6s 122ms/step - loss: 0.0332 - acc: 0.9983 - val\_loss: 1.4058 - val\_acc: 0.6200\n",

"Epoch 28/30\n",

"47/47 [==============================] - 5s 104ms/step - loss: 0.0252 - acc: 0.9991 - val\_loss: 1.4251 - val\_acc: 0.6400\n",

"Epoch 29/30\n",

"47/47 [==============================] - 5s 106ms/step - loss: 0.0260 - acc: 0.9983 - val\_loss: 1.4426 - val\_acc: 0.6400\n",

"Epoch 30/30\n",

"47/47 [==============================] - 5s 107ms/step - loss: 0.0757 - acc: 0.9820 - val\_loss: 1.4997 - val\_acc: 0.6200\n"

]

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"data": {

"text/plain": [

"<tensorflow.python.keras.callbacks.History at 0x1e37ccb4e10>"

]

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"execution\_count": 11,

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}

],

"source": [

"model.fit\_generator(x\_train,steps\_per\_epoch =47,epochs = 30,validation\_data = x\_test,validation\_steps = 20)"

]

},

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"execution\_count": 12,

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"outputs": [],

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"model.save(\"things.h5\")"

]

},

{

"cell\_type": "code",

"execution\_count": null,

"metadata": {},

"outputs": [],

"source": []

}

],

"metadata": {

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"display\_name": "Python 3",

"language": "python",

"name": "python3"

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"version": 3

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"pygments\_lexer": "ipython3",

"version": "3.7.3"

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