

DATE : 08.11.2022

TEAM ID : PNT2022TMID32512

PROJECT NAME : DIGITAL NATURALIST-AI ENABLED TOOLS FOR BIODIVERSITY RESEARCHERS

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IMPORTING REQUIRED LIBRARIES:

```

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

    import cv2\n",

    from os import listdir\n",

import time \n",

```

DATA AUGMENT FUNCTION:

```
def augment_data(file_dir, n_generated_samples, save_to_dir):\n",\n    data_gen = ImageDataGenerator(rotation_range=30, \n",\n    width_shift_range=0.1, \n",\n    height_shift_range=0.15, \n",\n    shear_range=0.25, \n",\n    zoom_range = 0.2, \n",\n    horizontal_flip=True, \n",\n    vertical_flip=False, \n",\n    fill_mode='nearest', \n",\n    brightness_range=(0.5,1.2) \n",\n\n    for filename in listdir(file_dir):\n",\n    image = cv2.imread(file_dir+'/'+filename)\n",\n    image = cv2.cvtColor(image,cv2.COLOR_BGR2RGB)\n",\n    image = image.reshape((1,)+image.shape)\n",\n    save_prefix = 'aug_' + filename[:-4] \n",\n\n    i=0\n",\n\n    for batch in data_gen.flow(x=image, batch_size=1, save_to_dir=save_to_dir,\n\n    save_prefix=save_prefix, save_format='jpg') \n",\n    i += 1\n",\n",\n    if i > n_generated_samples:\n",\n    break\n",\n\n    "augmented_data_path = '/content/Augument Dataset'\n",\n\n    "augment_data(file_dir='/content/Digital Naturalist Dataset/Bird/Great Indian Bustard Bird',\n    n_generated_samples=20, save_to_dir=augmented_data_path+'/GIB_AUG')\n",\n\n    "augment_data(file_dir='/content/Digital Naturalist Dataset/Bird/Spoon Billed Sandpiper Bird',\n    n_generated_samples=20, save_to_dir=augmented_data_path+'/SPS_AUG')\n",\n\n    "augment_data(file_dir='/content/Digital Naturalist Dataset/Flower/Corpse Flower',\n    n_generated_samples=20, save_to_dir=augmented_data_path+'/Corpse_AUG')\n",
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