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Notes: Training can be run in Drive (google Collaboratory）

, but the training data creation project can only be run in Local PC.

-Drive (google Collaboratory）-

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Drive（google Collaboratory）

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Copy from SSD or Download from GitHub

**When copying from SSD**

Folder structure

Extreme SSD (E:)

ホテイアオイの研究データ**（Water hyacinth research data）**

HSV(宮本)

JGB＋JSON

学習過程の画像

学習結果の画像

学習済みデータ(.pth)

原画像

実装プログラム**（Implementation program）**

未学習データセット(保存版)

ホテイアオイ\_仮想環境

・Please copy the folder of **\implementation program\Drive** and upload it to Google Drive

・Open **Drive\PSPnet\_project\PSPnet\_learning.ipynb** in Google Drive

**When download from GitHub**

モニター画面に映る文字のスクリーンショット

自動的に生成された説明

・I have received an invitation from "Imamura Lab." to my personal GitHub account

グラフィカル ユーザー インターフェイス, アプリケーション, Teams

自動的に生成された説明

・You can download the file from the code by selecting the "Verification-aerial-photography-altitude-water-hyacinth-PSPnet" project from the "Imamura Lab." projects.

How to connect to Google Collabo's drive

・  Run the following code in Drive\PSPnet\_project\PSPnet\_learning.ipynb

from google.colab import drive

drive.mount('/content/drive')

・Click Connect to Google Drive in「Allow this notebook to access files in Google Drive?」

・Please select and authorize an account.

・A file called 「drive」 will appear as shown below.

グラフィカル ユーザー インターフェイス, テキスト

自動的に生成された説明

・Once confirmed, the connection is complete.

Register and log in to Weight and Biases

・access the <https://wandb.ai/site>

・please, Sign Up. (Recommend Google account)

・Open Weight and Biases User Settings.

・Set a username and an arbitrary project name for the following program.

・  Run the following code in Drive\PSPnet\_project\PSPnet\_learning.ipynb

!pip install wandb -qqq

・Copy the Danger Zone API key and paste it into the program below.

!wandb login \*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*

・Set a name and an arbitrary project name for the following program.

wandb.init(project="\*\*\*\*\*", entity="\*\*\*\*\*\*\*")

・ Run the above program

How to run the implementation program

・Check file path

ROOTPH = '/content/drive/MyDrive/project\_name /dataset\_name'

'

・　Run all code. Try running it in epoch 3.

Building\_a\_development\_environment\_using\_anaconda

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download Anaconda

・Please download from the following URL.

「<https://www.anaconda.com/products/distribution>」

Import the virtual environment package

・Start anaconda and click Environments. Click Import below.

グラフィカル ユーザー インターフェイス, アプリケーション, メール

自動的に生成された説明

・Select the local drive and select "ホテイアオイ\_仮想環境" from SSD to import. Also, import other files in the same way.

Connect to Google Collaboratory

カレンダー

自動的に生成された説明

・Install “VScode” and “Jupyter note book” from anaconda home and Launch it.

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自動的に生成された説明

・By switching the above kernel, you can change the virtual environment.

Local\_PC ============================

・The execution method is the same as Google Drive. Note that some work is required to allow PyTorch to specify and switch GPU/CPU for Tensors and models.

Settings to enable use of CUDA

・Install a GPU of 12GB or more in the PC. (This manual only explains about Windows of PCs with NVIDIA GPUs.)

・Download and install " CUDA Toolkit" from the following URL.

<https://developer.nvidia.com/cuda-downloads?target_os=Windows&target_arch=x86_64>

・Download the driver from below.

<https://www.nvidia.co.jp/Download/index.aspx?lang=jp>

・Download cuDNN and install it on your PC.

https://developer.nvidia.com/cudnn

・Check GPU status. Open a command prompt and enter the command "nvidia-smi". Make sure CUDA, drivers and cuDNN are installed and available as below.

テキスト

自動的に生成された説明

・When executing, if the program "device = torch.device('cuda:0')" is executed and the output of device is "cuda:0", it is successful.

Note: See the following pages for detailed settings and explanations.

<https://docs.nvidia.com/cuda/cuda-installation-guide-microsoft-windows/index.html>

<https://docs.nvidia.com/cuda/cuda-toolkit-release-notes/index.html>

Create training data

＝＝＝＝＝＝＝＝＝＝＝＝＝＝＝＝＝＝＝＝＝＝＝＝＝＝＝＝＝＝＝＝＝＝＝＝

How to open LabelMe

・Start Anaconda.

・Switch to the virtual environment called LabelMe and click the green button. Select "Open Terminal".

テーブル

低い精度で自動的に生成された説明

・If you enter the command "labelme" from the terminal, the following page will open, so press "Create" and enclose the water hyacinth in the image.

背景パターン

自動的に生成された説明

How to label

・After enclosing, you can select the label as follows.

グラフィカル ユーザー インターフェイス

自動的に生成された説明  
・When you go to the next image, the enclosed coordinate data will be saved in the JSON file.

How to generate annotation data

・Create a dataset of annotation data using the “Create\_annotation” file in the “annotation\_project” folder.

・Set the virtual environment (kernel) to "annotation\_project".

・Enter the project, the path of the labeled data, and the new dataset name. Enter the number of cards to be allocated in "TRAIN" and "VAL" below. Fill in the class name in labels.txt in the project and you're done.

テキスト

自動的に生成された説明

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自動的に生成された説明

・Please practice.

Note:

"rename.ipynb" in annotation\_project is a program used to connect and organize datasets.