Dataset Introduction EyeDiap

Note that, using `data_processing_diap.py`, you can get `Image` and `Label` folder. You should make a new folder named `ClusterLabel` or other name, and run `python Cluster_diap.py` in the folder. After clustring, you should remove the `Cluster_diap.py` from `ClusterLabel` folder.

File Structure

```
EyeDiap
   |
   |-Label
   |    |
   |    |-p1.label
   |    |     .
   |    |     .
   |    |     .
   |    |-p16.label
   |
   |-Image
   |    |
   |    |-p1
   |    |  .
   |    |  .
   |    |  .
   |    |-p16
   |        |-face
   |        |-left
   |        |-right
   |            |-1.jpg
   |            |-2.jpg
   |            |   .
   |            |   .
   |            |   .
   |
   |-ClusterLabel
           |-Cluster0.label
           |-Cluster1.label
           |-Cluster2.label
           |-Cluster3.label
```

`.label` File Format

Each `.label` file in `ClusterLabel` contains the data of one cluster. Each line contains the data of one image. The first line in `.label` file is the name of contained variables. Variables are separated by space. As for variables contain more than one value. values are separated by `,`.

- `Face` - `string` - Path of normalized face image relative to `../Image/` .
- `Left` - `string` - Path of normalized left eye image relative to `../Image/` .

- `Right` - `string` - Path of normalized right eye image relative to `../Image/` .
- `grid` - `string` - Path of face grid image relative to `../Image/` .
- `metapath` - `string` - Indicate the original image.
- `2DGazePixel` - `(2,)` - Ground truth of POG in pixel coordinates.
- `HeadRot` - `(2,)` - Ground truth of normalized 2D head orientation vector *i.e.* yaw and pitch.
- `HeadTrans` - `(3,)` - Ground truth of 3D head translation in normalized CCS.
- `ratio_p2mm` - `(2,)` - Ratio from screen pixel to millimeters.
- `FaceCorner` - `(4,)` - Pixel coordinates of top-left and bottom-right corner of face image.
- `LeftEyeCorner` - `(4,)` - Pixel coordinates of top-left and bottom-right corner of left eye image.
- `RightEyeCorner` - `(4,)` - Pixel coordinates of top-left and bottom-right corner of right eye image.

Geting Start.

You could read the line in `.label` file for reading image data.

Assuming the root path is `/home/EyeDiap`. You could:

```python
import os
import cv2

# line; One line in `.label` file.
imroot = '/home/EyeDiap'

face_path = os.path.join(imroot, 'Image', line.split(' ')[0])
left_path = os.path.join(imroot, 'Image', line.split(' ')[1])
right_path = os.path.join(imroot, 'Image', line.split(' ')[2])
grid_path = os.path.join(imroot, 'Image', line.split(' ')[3])

face_image = cv2.imread(face_path)
left_image = cv2.imread(left_path)
right_image = cv2.imread(right_path)
grid_image = cv2.imread(grid_path)

label = line.strip().split(' ')[5].split(",")
label = np.array(label).astype('float')
```