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 `,`.

- `Image` - `string` - Path of normalized eye image relative to `../Image/` .
- `Origin` - `string` - Indicate the origin image.

- `WhichEye` - `string` - Denote which eye the frame is.
- `3DGaze` - `(3,)` - Ground truth of normalized 3D gaze direction vector.
- `3DHead` - `(3,)` - Ground truth of normalized 3D head orientation vector.
- `2DGaze` - `(2,)` - Ground truth of 2D gaze direction vector *i.e.* yaw and pitch.
- `2DHead` - `(2,)` - Ground truth of 2D head orientation vector *i.e.* yaw and pitch.
- `Rmat` - `(3,)` - Rotation vector from original Camera Coordinate System (CCS) to the normalized CCS.
- `Smat` - `(3,)` - The diagonal elements of the scale matrix used in normalization procedure.
- `GazeOrigin` - `(3,)` - Origin of 3D gaze vector in normalized Camera Coordinate System.

Geting Start.

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

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

```
import os
import cv2

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

image_path = os.path.join(imroot, 'Image', line.split(' ')[0])

image = cv2.imread(face_path)

label = line.strip().split(' ')[3].split(",")
label = np.array(label).astype('float')
```