

# Dataset Introduction EyeDiap

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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 clustering, 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/` .
- **metapath** - *string* - Indicate the original image.
- **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.
- **Rvec** - *(3,)* - Rotation vector from original Camera Coordinate System(CCS) to the normalized CCS.
- **Svec** - *(3,)* - The diagonal elements of the scale matrix used in normalization procedure.
- **GazeOrigin** - *(3,)* - Origin of 3D gaze vector in normalized Camera Coordinate System.

## Getting 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'

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])

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

label = line.strip().split(' ')[4].split(",")
label = np.array(label).astype('float')
```