

Project: Human action recognition from videos

Members: Siyun Wang, Yutong Liu, Huang Li

Trainlist_10.txt

Txt file includes all videos' name of 10 classes.

Video_processing.p

Processing 10 classes of data in UCF101. The function of 'Downsample' is sampling each frame from (240,320) to (120,160). The function of 'transfer3D' is converting video (4D matrix) to a 3D matrix which includes the width, height and length of each sub video. The function of 'processvideo' is converting the color image to gray image and save it into a file. The main function 'Getdata' is used for converting the 3D matrix of each sub video to a vector and saving the data to a pickle file, as the input of CNN model.

data_y10.p

Pickle file contains input label.

data_x10.p

Pickle file contains input data.

Human_action_recognition.py

The main code includes CNN model, uses data_y10.p and data_x10.p as input label and input data, respectively. Outputs are three figures, which are 'training and validation accuracy' figure, 'loss' figure, 'learning rate' figure.

The video set is too large, so our file just includes the data we already processed.