ReadMe

Libraries to install:

- keras
- tensorflow
- opencv
- imutil
- tqdm
- sklearn
- pandas
- numpy

Image Dataset Folder:

- Dataset (contains 52 sub-folders with each mudras)

Project.py:

- The code is run as python Project.py
- The code is used to extract the images from the dataset as numpy array and assign labels according to the sub-folder names.
- The image arrays are pre-processed and split into training and testing.
- The training set is used to create a prediction model using convolutional neural networks
- The model is verified against the test set.
- Generation of the model is time consuming and takes more than 6 hours due to the large dataset

RealTime.py:

- Webcam should be enabled.
- The code is run as python RealTime.py
- The code loads the prediction model generated from Project.py and uses it to predict the mudra.
- A screen of the webcam with a rectangular frame opens. The mudras must be made within this frame.
- A dictionary that associates the label to the mudra name is used to predict the symbolic gesture.

mudras_model_2.h5:

- The prediction model generated from the training set.
- This model is used to verify the real-time results.

Reference

[1] Real-Time Hand Gesture Recognition. Retrieved on May 31, 2019. https://github.com/SparshaSaha/Hand-Gesture-Recognition-Using-Background-Elllimination-and-Convolution-Neural-Network/blob/master/ContinuousGesturePredictor.py