Teachable HandPose

OFFICIAL DOCUMENTATION

How to Start?

Steps:

i. Download and Install XAMPP Server
ii. Download and Extract hand_pose OR clone from GitHub (https://github.com/saleem3864/teachable-handpose.git).
iii. Copy hand_pose folder from Your Extracted Location to 'your_installation_drive/xampp/htdocs'
iv. Start XAMPP, inside XAMPP start Apache Service.
v. Open Web Browser and surf http://localhost/hand_pose

How to use Model?

1. Data Collection:
    i. Click On Data Collector Button
    ii. Give Camera access to the page
    iii. Let HandPose Model Status be READY!
    iv. Enter Any Key (Key Refers to meaning to the symbol whose data you want to collect i.e enter 1 if you are recording a hand gesture of one)
    v. Place Hand before Camera and make sure that Hand Joints Pointed Green.
    vi. Put Your hand in gesture of that key.
    vii. Click On Collect (Status will be Changed).
    viii. Move Your hand to different locations in that same pose to collect data from different locations and angles.
    ix. Click On Pause to Stop Data Collection
    x. Place Your Second hand for that collecting data from other angle for that gesture (if You Want, it's not necessary) **OR** change the key and place your hand with other gesture to collect data for that gesture and resume to collect data again.
    xi. After You are done with data collection of all gestures (Collect gestures for more than equal to 2 different keys) click on 'Save Data' to download json of collected data.

    DATA COLLECTION COMPLETED.

2. Model Training:
    i. Click On Model Trainer Button
    ii. Go to your downloads folder and find json file containing Collected data
    iii. Rename that file to 'collected_json_dataset';
    iv. Move that file (collected_json_dataset.json) to 'your_installation_drive/xampp/htdocs/hand_pose/model_trainer' (delete previously available file)

     v. Come back to browser and give number of epochs as per your wish (default 100, more the epochs more the accuracy + more time consumption for training)

     vi. Click on Train Model and keep an eye on Training Status and Training Performance graph

     vii. Once the training is completed and Training Status is Model Training Completed and epochs Graph reaches to end then click on 'Save Trained Model' to download model files (model.json, model_meta.json, model.weights.bin)

MODEL TRAINING COMPLETED.

3. Pose Classification:

     i. Go to your downloads folder and find trained model files (model.json, model_meta.json, model.weights.bin)

     ii. Move those files (model.json, model_meta.json, model.weights.bin (names must be exact)) to 'your_installation_drive/xampp/htdocs/hand_pose/pose_classifier/trained_data' (delete previously available files)

     iii. Come back to browser and Click on Pose Classifier Button

     iv. Give Camera access to the page

     v. Let HandPose Model Status and Our Trained Model Status be READY!

     vi. Place Hand before Camera and make sure that Hand Joints Pointed Green.

     vii. Put Your hand in gesture of any of keys that you collected and trained model.

     viii. The Key Will be Shown below the camera canvas (if accuracy > 75% (you can change it from code)) along with accuracy percentage;

YOUR TRAINED MODEL IS READY!

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