Visual Communication with haptic gloves

Installation

Sign Recognition

Move to sign recognition folder

```
$ cd Source_Code/version_1.0_CORPUS/sign_recognition
```

Install the dependencies

```
$ pip -r requirements.txt
```

Web Interface

Move to web interface forlder

```
$ cd Source_Code/version_1.0_CORPUS/web_interface
```

Install the dependencies

```
$ npm install
```

Install and calibrate the Sensogloves

https://senso.me/dev

Steps	Instruction
1	plug your bluetooth dongle
2	connect the glove to the dongle: (SENSO_BLE_SERVER.exe)
3	start the UI: (SENSO_UI.exe)
4	click on ‘Connect to server’
5	select your glove in the list
6	click on ‘Connect to glove’
7	click on ‘calibrate’, follow instructions on the images
8	test vibration ‘Test vibro’ to make sure the glove is connect. Futhermore you should see the data refreshing every ~10ms

How to start the project

1. Start web interface

Start the web interface and listen on the port 8080 for any data the glove send us

```
$ yarn start 3000
```

2. Open Website

Open the web page in your browser

```
$ firefox localhost:8080
```

3. Start the Sign Recognition script

Start the script in order to receive the signs and send them to the web interface

```
$ python3 sign_matching.py <glove_host> <glove_port> <webinte
rface_host> <webinterface_listing_port> <signsbank_file.dat>
```

Description:

Arguments:

- `glove_host` and <glove_port> can be found on the SensoUI.
- `webinterface_host` is usually localhost since you're going to open the website on your computer.
- `webinteface_listening_port` corresponds to the first command you did above (1.), here 3000.

> *Your command should look like this (with your own server_address/ip): python3 sign_matching.py 192.168.56.101 53450 localhost 3000*

Record new signs

If you want to create a new sign you need to start sign_recording.py as follow:

```
$ python3 sign_recording.py <glove_host> <glove_port> <file_name.dat>
```

> *The <file_name.dat> is of your choosing. By default you can use signDataBank.dat*

In the end you should get this command:

```
$ python3 sign_recording.py 192.168.56.101 53450 signDataBank.dat
```

> *Once the script executed, make your sign then press r to record the position and name it (follow instructions). Repeat the process as long as you want to insert signs into your signDataBank.*
> *When you are done can press q to quit.*

> *Restart the the software (3.), go on the website and have fun !*

Requirements

- Express

- Socket.io
- Python3.x
- Pip
- Npm
- Senso-Driver v08.06.2018

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