Directory:

HRTF_GAN_training contains the code used to train the GAN models. Run 'generate_projection', then ‘preprocess’ and ‘train’.

HRTF_barycentric_interpolation contains the modified code to do barycentric interpolation for low resolution HRTF data. For example, 80 nodes up-sampled to 1280 nodes, 20 -> 1280, 5-> 1280. Run 'generate_projection', then ‘preprocess’.

File:

copy.py copies the selected validation data into a folder.

merge.py merges the left and right ears HRTF into one, stack them on the frequency channel.

SD_per_node.py plots SD error per measurement node for sofa files.

SD_per_band.py plots SD error per frequency band for sofa files.

plot_line.py plots line graphs for the SD and localisation evaluation results

plot_box.py plots errorbar graphs for the SD and localisation evaluation results.

down_sample.py down-samples left and right HRTF data in pickle files by a given scaling factor and saves to one sofa files.

save_to_sofa.py saves left and right HRTF data pickle files back to sofa files.

generate_pinna_half_head.py contains the Blender script that randomly generates pinna with half head models with the 15 measured PPM data and saves to obj files

check_bad.py Blender script checks if the mesh is bad (too few elements).

head_stitcher.py Blender script stitches two half head into one and make it ready for meshgrading.

mesh_grading_script.txt contains the script for mesh grading plugin in OpenFlipper platform.

mesh2hrtf.py Blender script rescale the model back from mesh grading output and saves as Mesh2HRTF folders waiting for BEM calculation.

rendering.py Blender script that renders pinna models and output black and white images and depth images.

run_numcalc.py runs output2HRTF.py in each BEM calculated mesh2hrtf folder and move them to another folder.

make_dataset.py moves files to make dataset.

add_ITD.py adds ITD back to the interpolated HRIR data

remap.m scales the Mesh2HRTF generated HRIR data into the same magnitude level with ARI data.

calc_localisation.m does localisation evaluation between the interpolated HRIR and real HRIR

listen.m applies a given HRIR to a given audio clip with desired locations and durations and saves as a spatial audio clip.

remove_ITD.m removes and saves the ITD without using Kalman Filter.