

Folder Structure:

- individualiser_module
 - individualiser
 - analysis
 - subjects
 - logs
 - daily folders
 - tests
- vr_env
 - scripts

For the purposes of this hand-in, I have elected to omit the bulk of the code for the VR test environment. The majority of this code, roughly 25,000 lines of C#, was generated by Unity or contained inside external SDKs and given the simplicity of the environment, including it seemed unnecessary. I have, however, included a link to download the .apk file in a text file in the vr_env folder for reference. The files I have included are contained within the vr_env/scripts folder, and constitute the important elements of this part of the implementation - most notably the code used to transmit the source/perceived location vector information. The actual production database is also omitted of course, as it contains an archive of every HRTF generated for every test subject and the current size is roughly 16gb, but the data required to run the program can be generated through a script.

The folder individualiser_module contains most of the code required to run this project. The only required addition would be to download the CIPIC HRIR data and store it at the following location:

individualiser_module/individualiser/hrtf_data/CIPIC/

Within that CIPIC directory there should be a subfolder labeled CIPIC_hrtf_database that in turn contains the standard_hrir_database subfolder with all the subjects.

Next, any dependencies should be installed (possibly manually, sorry) and the Python script generate_data.py should be run in order to create an LMDB database and store the required starting values. After that, running __main__.py will start the program.

The individualiser_module/individualiser/logs/ folder is pretty self-explanatory, containing a folder for each day of logs, logs which were captured every time the __main__.py process ran the individualiser function.

Contained in the individualiser_module/individualiser/analysis/ subfolder are the scripts used to process the data, with data for each participant's listening tests extracted and stored in subjects/.

The individualiser/tests/ subfolder contains scripts used for early-stage testing, to ensure that complex matrix transformations worked correctly. Future testing was performed using the Python interpreter, much to my shame.

Lastly, my apologies to any marker who happens to wade into the code. It got... Bad in there. I'll be starting to refactor, document, and streamline things in the coming days, but right now it's a shambles.