Deep Learning Class Team Project Proposal

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1 Goal

Our team aimed to control the music player with intuitive actions, using pose estimation model.

2 Motivation

In modern society, music is the one of essential factors in our work environment. But, for some people, controlling computer application is pretty challenging. For example, people who can't be absent on their work-space, or who are not familiar with controlling computer, like the elders and young children. So, we aimed to make more intuitive and convenient music controlling interface, using pose estimation.

3 Methods & Materials

3.1 Pose estimation model

We're planning to use "Exemplar Fine-Tuning (EFT)" model for the pose estimation. Because the model achieved the State-of-the-Art, and it is based on the Pytorch library which is more familiar with our team, rather than other deep learning libraries.

3.2 Methods to control the application

Our team will mainly focus on basic functions of music player, which are 'Volume up', 'Volume down', 'Play', 'Stop', 'Pass to next song', 'Back to previous song', and 'Terminate'.

- Volume up and down: Raising up left & right arms
- Move to previous or next song: Touching left & right shoulders
- Music play and stop: Clapping hands
- Terminate: Clapping hands above head

Notice that each controlling methods can be changed, depends on the performance of the application. We will use 'Pygame' library to play music on Python environment.

4 Future works & Timeline

Every tasks will be allocated to all team members equally

- Model test & Code review (10/29 - 11/11)
- Algorithm design (11/12 - 11/25)
- Demo application (11/26 - 12/9)
- Writing article / Preparing presentation (12/10 - 12/16)
- Submission (12/17)