Deep-Learning Class Team Project Proposal

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1   Goal

Our team aimed to control a music player with intuitive interface using pose estimation model.

2   Motivation

In modern society, music is one of the most 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 older and young children. So, we aimed to make more intuitive and convenient way to control music player 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-Arts in pose estimating models, 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 music player

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

- Volume up and down: Raising up left or right arms

- Move to previous or next song: Touching left or right shoulders

- Music play and stop: Clapping hands

- Terminate: Clapping hands over head

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