Gifted Education Fund

AIoT Coding, Engineering and Entrepreneurial Skills Education for Gifted Students

Musical Score Page Turner

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Background/Motivation

•As a ***casual*** piano player, I like to find sheet music from the internet

•It is ***annoying*** to turn a page of the score ***manually*** every single time as the flow of the motion of my hands is ***interrupted***, especially for some scores with poor typesetting

Objective:

•To create a software that recognizes when to turn a page of a musical score

Existing Solution

- Enote: Most comprehensive software with automated page turning ***coming soon***, but ***can't import scores*** + ***expensive subscription*** (Aimed for ***professional*** musicians, not ***casual*** users)
- GitHub open source projects on OMR (Optical music recognition) e.g. Orchestra by AbdallahHemdan -> only converts images of score to machine readable format, ***can't turn a page***
- Github open source projects on DTW (Dynamic time wrapping) for score following (https://github.com/flippy-fyp/flippy) -> no direct import of scores
- Page turner pedals -> ***expensive*** https://newzik.com/en/blog/best-page-turners/
- Eye-gaze page turning/ other methods researched/ in research -> ***each has their own limitations***(https://www.frontiersin.org/articles/10.3389/frai.2020.00057/full)

==> ***Currently*** no ***easily available software*** can turn a page of any input musical score accurately

Your Solution

•Input: Images of printed musical score -> use OMR ML models to recognize musical objects -> synthesis audio of from the score

•Real time audio input -> undergo SliceCQT -> perform dynamic time wrapping with the synthesized audio

•When reached/ near end of the page -> turn the page

Questions

- ***When turn a page, only change top row of the page? -> need more slices of images, but can accommodate larger errors in page flipping***
- ***Found some papers and ML models with datasets on github or other sources, can we apply the methodologies used? Where to put citations?***

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