

REAL-TIME GAZED-CONTROLLED DIGITAL PAGE TURNING SYSTEM

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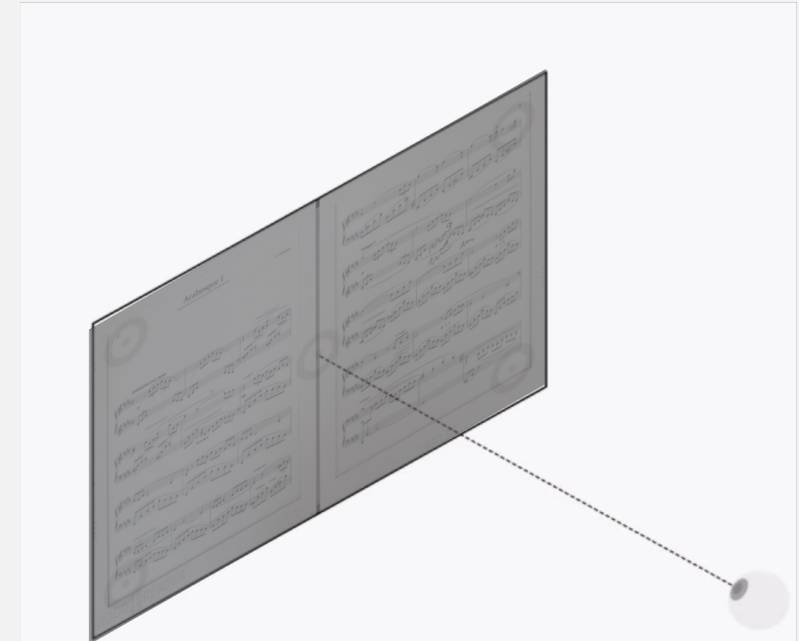
Motivation: For musicians, turning music sheets by hand while playing an instrument has always posed an unpleasant challenge. In this work, we provide more accessible page turning solution to free musicians' hands and feet by tracking their eye gaze with webcam/eye tracker and turns digital pages automatically when it receives the indication to do so.

GOAL AND METHODOLOGY

Goal: Activate digital page turning by tracking the direction and length of user's eye gaze

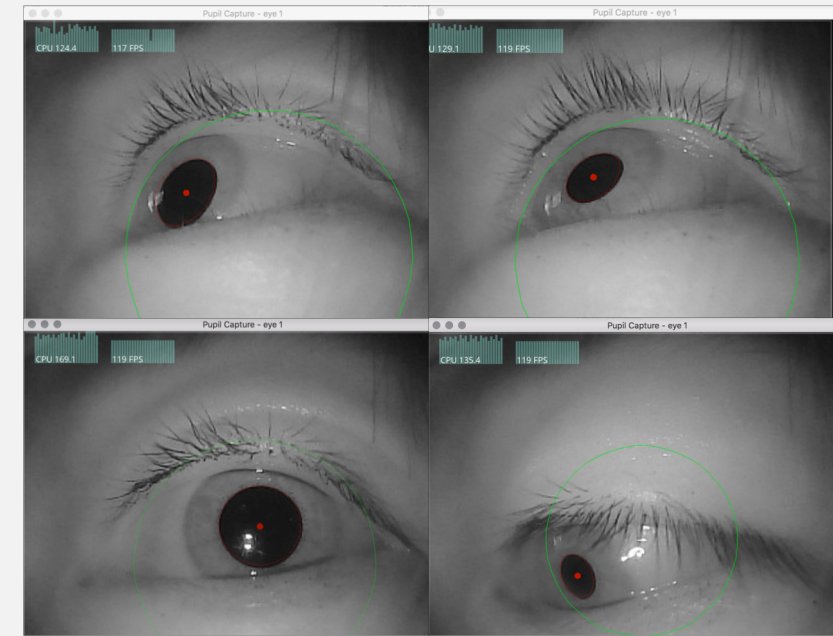
Plan of Action:

- ❑ specify corner regions on each page which will act as “hot corners” to signal the page turning.
- ❑ The user will then activate the “hot corner” by staring directly at it for a specified short period of time.
- ❑ Accuracy of mapping between the edge of field of view and eye gaze direction needs optimization



SETUP

- ❑ Use PupilLabs eye tracking camera - a specialized hardware that captures the up-close shot of the eye and detects the pupil.
- ❑ The distance to the sheet is fixed between 10 - 50 cm, with better accuracy falling around 30 cm range.
- ❑ The user will then activate the “hot corner” by staring directly at it for a specified short period of time.



DATASET & INITIAL RESULTS

- ❑ Pupil segmentation
- ❑ Pupil centroid localization
- ❑ Gaze direction calibration

