`vid_play_v0.7` Duckumentation 🦆 ▶️

An event marker that allows you to preview frames much smoother than previous MATLAB code.

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Requirements

`pip install pyqt6`

Won't work with pyqt5.

Written and tested in python 3.12.0.

Controls

Playback

- `↔` steps `STEP` numbers of frame (default STEP = 1 frame)
- `↑↓` steps `LARGE_STEP_MULTIPLIER*STEP` of frame
- `space` for play/pause
- `numpad +-` adjust playback speed by 1.1x/0.9x
- `numpad Enter` reset speed to 1x
  speed changes sometimes have latency; don't hit too hard
- timeline is draggable
- allows frame input by double-clicking on frame number in the right bottom

Marking

- `1` ~ `5` (above qwerty) sets marker at current timepoint
- markers will appear above timeline, left click to jump
- `CTRL+Z` undo, `CTRL+SHIFT+Z` redo
- Marked events will be printed (on your screen, not on a paper) and saved when the window closes

Constants

- `MARKER_COLORS` colors markers above timeline
- `FPS` sets playback fps
- `FPS_ORIG` should be set to fps of actual video file. Our camera is `119.88` fps (not 120)
- `STEP` determines how many frames are stepped by when hitting arrow keys.
- `PAIRING` is Boolean; `PAIRING = True` draws pairing line between markers
- `PAIRING_RULES` is dict that determines what events are paired
- `TIMELINE_OFFSET = [L, R]` is two magic (not really) numbers that refines marker alignment to timeline slider. First element shifts markers' start position to the right;

second element reduces total drawing region's length.

- `MAGIC` compensates for `QMediaPlayer`'s inaccuracy. Set to 0 and
  there will be duplicate frames per 25 frames. Use `3` to show your devoutness in magic.

Notes

Data will be saved in `\Marked Events\{filename}.txt`. File name is determined by the used video. Note that videos matching this regex:

```
2025\d{4}-(Pici|Fusillo)-(TS|BBT|Brinkman|Pull)-\d{1,2}
```

will be saved into **one file regardless of the cam number**, nor DLC postfix.

The program will attempt to save data when:

1. app is closed;
2. a new video is opened.

If no event exists when exiting app, it will raise either AttributeError or AssertionError. It's ok.

Currently you can **NOT** quit and start halfway with previously saved data.

`QMediaPlayer` originally lacks support of frame-precise control. The displayed and recorded frame number are calculated by time/fps (1 ms accuracy). But given that even under 120fps, each frame is 8.34 ms, it should result in correct frame number even if not control by frames. Plus some `MAGIC` is used here. If you have any doubt on accuracy, just open the frame counter video under the same path and check if they match.

But if you just hit pause, the very frame number is likely to be deviated.