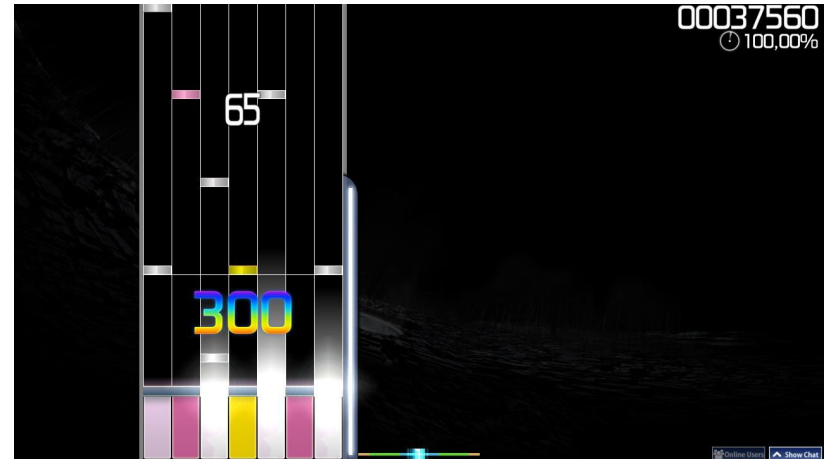
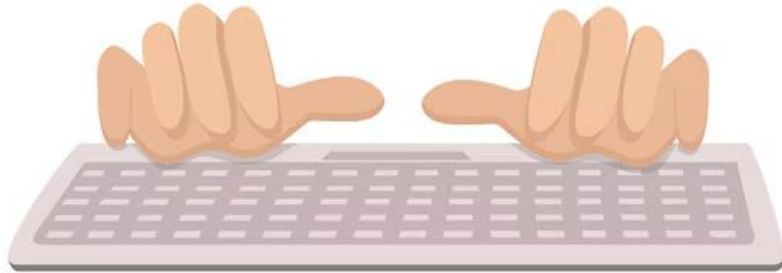


Mania-Vision

Press Detection for Rhythm Games

Group 21 :
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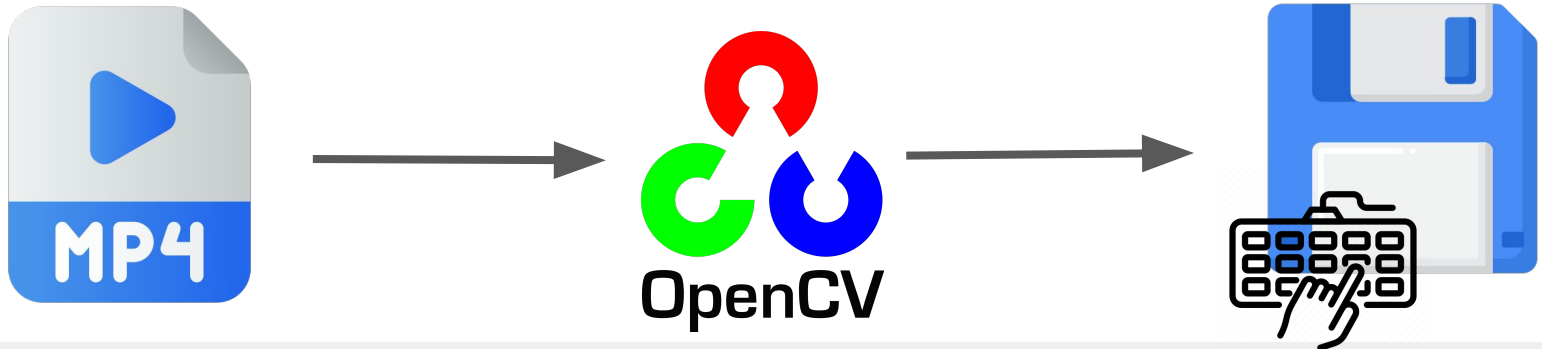
Rhythm games are interactive music-based video games where players perform actions in sync with a song's rhythm. The goal of these games is to hit visual cues, like notes or patterns, in time with the music, often at very **precise timings**. These games combine timing, reflexes, and music appreciation, offering engaging gameplay that improves hand-eye coordination and rhythm skills.



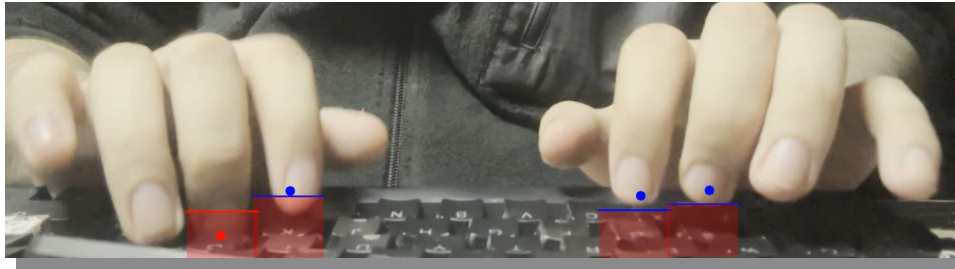
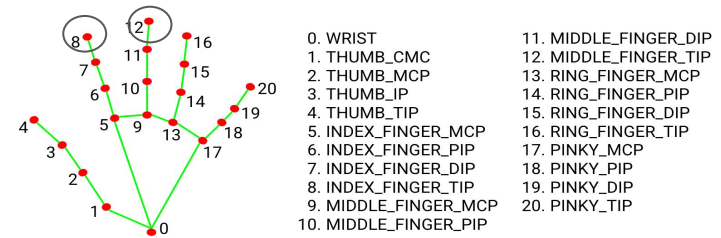
Our goal is to create a program that could analyze a video of someone playing a rhythm game, and then replay the level using those detected inputs.

Steps involved:

- **Detect** player finger presses on a keyboard.
- **Check** for a given frame, if a finger is pressed.
- **Generate** a press bitmapping based on those presses (more on this later).
- Be able to **replay** our input video's hits.



- Using Google's **MediaPipe**, we can easily retrieve where our hands are in a frame.
- Collect the finger tip coordinates for each finger (middle + index on both hands)
- Average out the **bottom 75% y coordinates** for each finger. (our POV)
- This should now generate four coordinates, what we will consider each finger's "**press coordinates**".



- A press is anything within -70px -> +70px for the x range.
- For the y range simply be beyond the press point's y level
- We then generate an output video using the encodings for color coding

- For a given frame, if a finger's tip coordinate is **within** the press range, consider it **pressed**.
- Create a bit encoding
 - left middle = 0b 0001
 - left index = 0b 0010
 - right index = 0b 0100
 - right middle = 0b 1000
- Final result is a file with a header of format:
 - FPS_numerator FPS_denominator VK1 -> n
- Using a presser program we can **convert** the frame encodings to ms hold/release times.

[illegible]

<https://files.catbox.moe/en9s9j.mp4>

Pianista (Frédéric Chopin) - Black Key Etude [EZ - Technical 5 [showcase]] BMS Overjoy (9 maps) 28 (fixed)
Mapped by Cyantfiction
Length: 01:38 BPM: 210 Objects: 287
Circles: 248 Sliders: 39 Spinners: 0
Keys: 4 OD: 6 HP: 6 Star Rating: 1.31 ★

Local Ranking ▼

No records set!

Group Collections ▼ Sort By Date Added ▼
Collections Recently Played By Artist By Difficulty No Grouping
Doable 1000+ PP (6 maps) Search: Type to search!

Mania Vision Showcase (2 maps)

Clinozoisite
Ludicin // rika
Intangible [showcase] (7K)

Black Key Etude
Frédéric Chopin // Cyantfiction
EZ - Technical 5 [showcase] (4K)

Ryoon
Performance: 19,470pp
Accuracy: 97.08%
Lv99

#48

osu!