

THE REARRANGER BALL

Delayed Gestural Control of Musical Sound using Online Unsupervised Temporal Segmentation

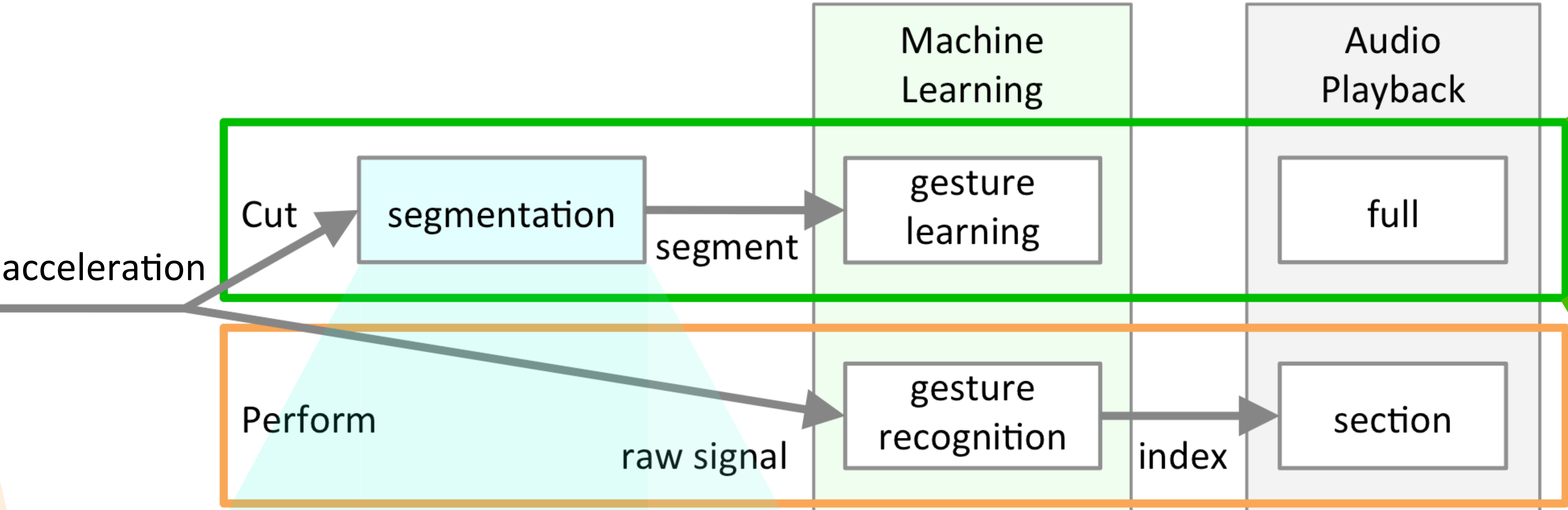
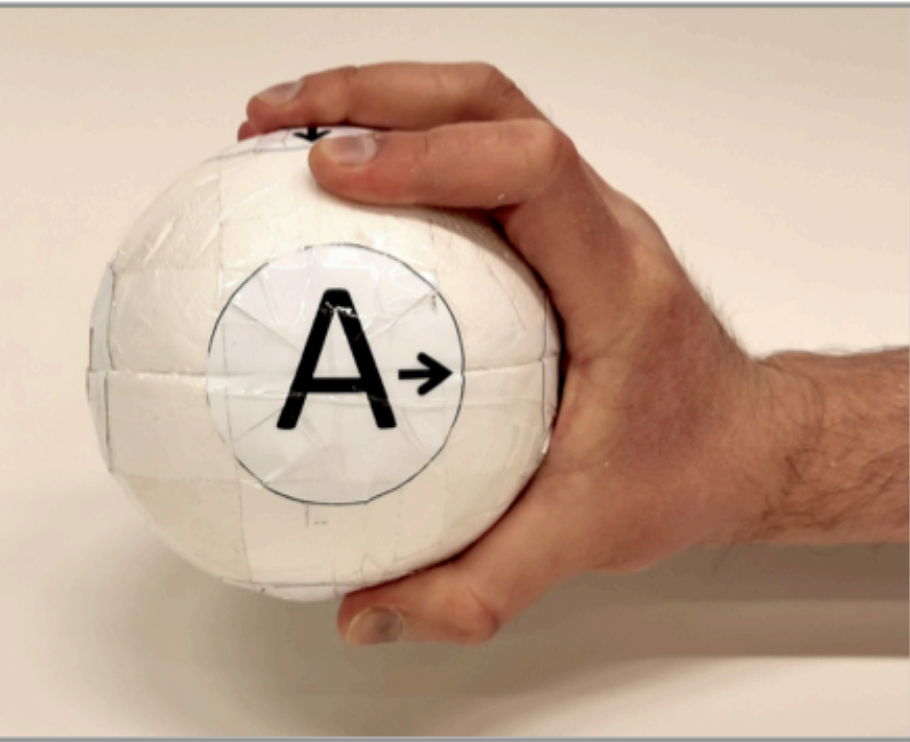
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OVERVIEW

A musical application that allows the user to reorder sections of an audio file.¹

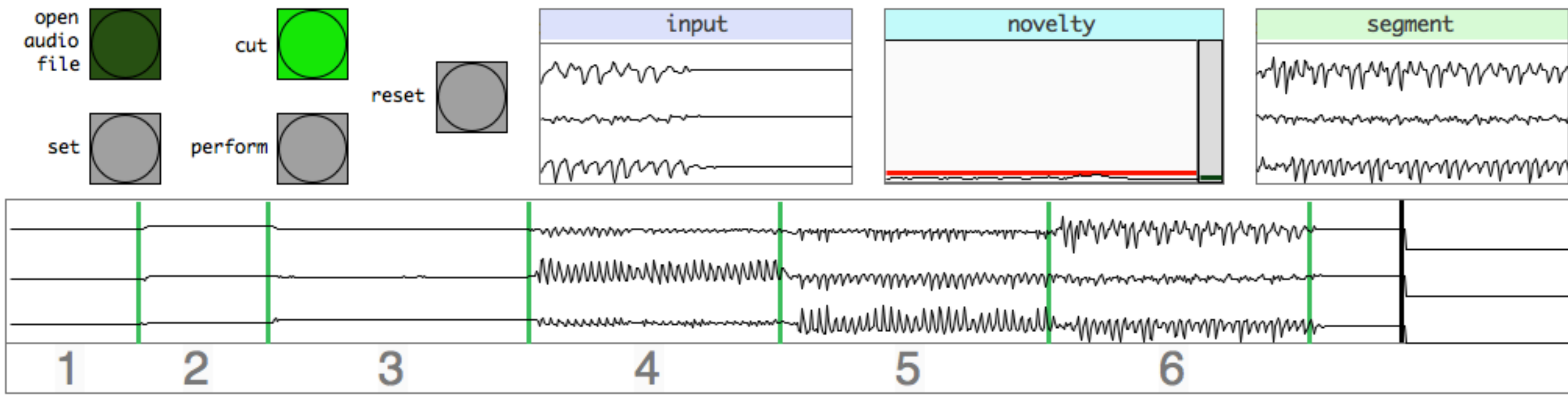
hand-held controller



SOFTWARE

https://gitlab.jyu.fi/juigmend/temporal_segmentation_gestural_control

GRAPHICAL USER INTERFACE



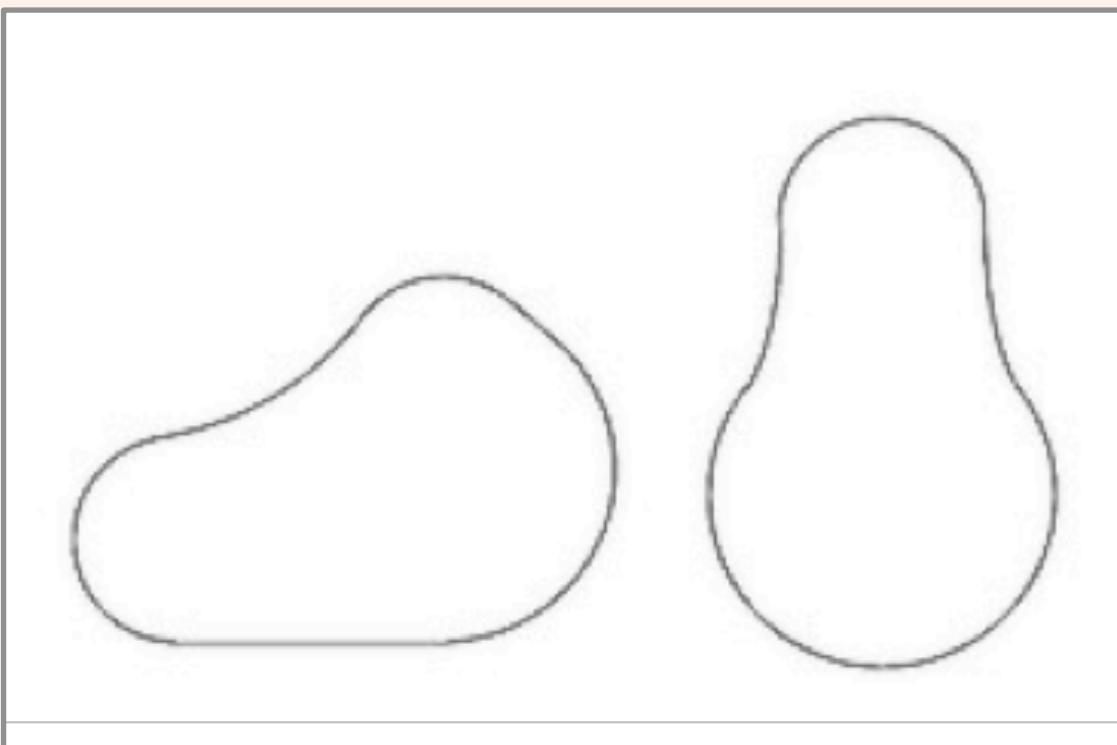
AUDIO

Any musical sound.

HARDWARE

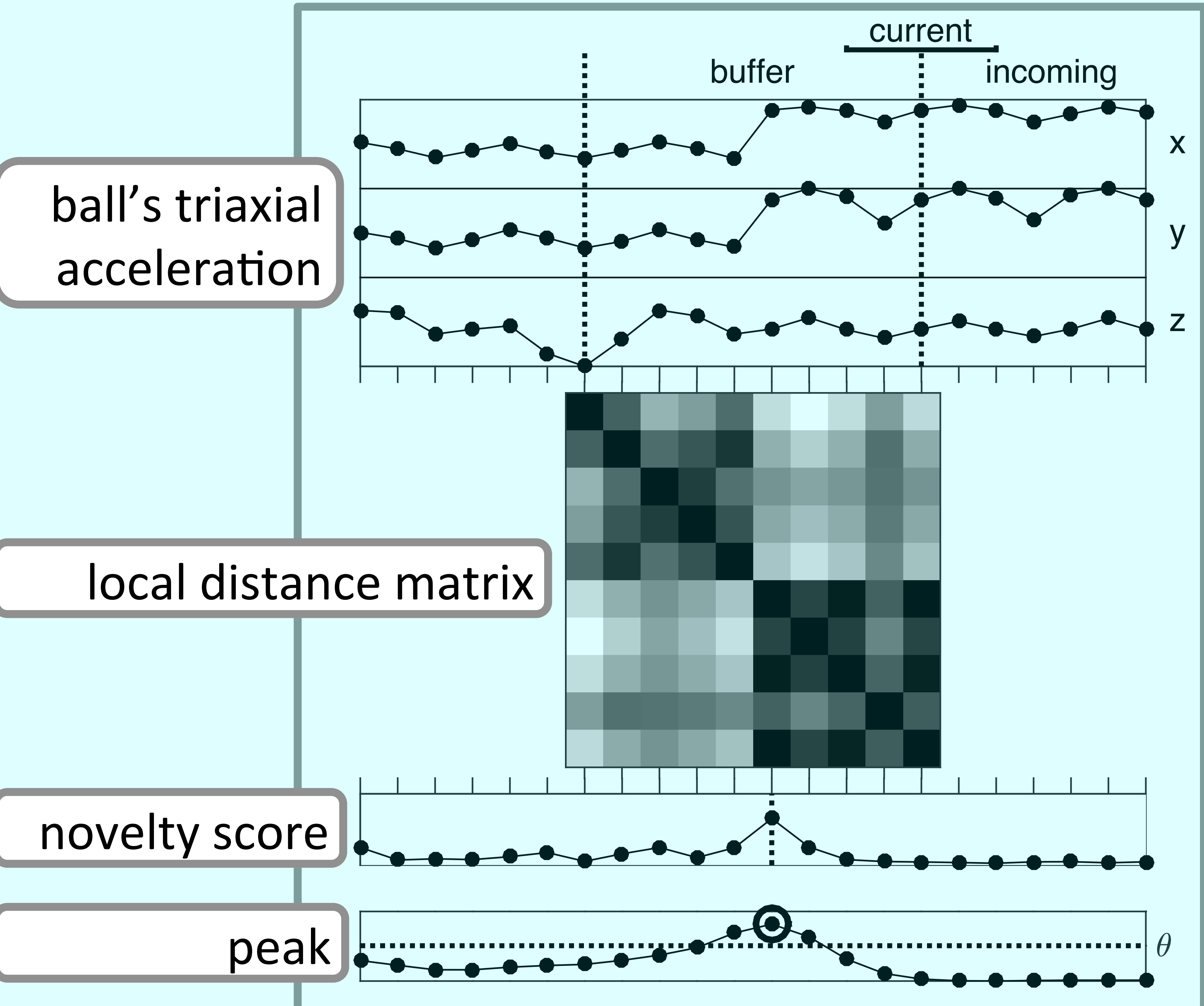


CURRENT:
Polystyrene ball with
Myo armband



FUTURE:
Assymetric form,
sensor fusion

ONLINE UNSUPERVISED TEMPORAL SEGMENTATION²



EXAMPLE GESTURES

| order | orientation | gesture | description |
|-------|-------------|---------|------------------------|
| 1 | A | . | do nothing |
| | | ↶ | rotate left |
| 2 | B | . | do nothing |
| | | ↑ | rotate forward |
| 3 | C | . | do nothing |
| | | ↶ | rotate left |
| 4 | D | ↕↕↕↕... | move up-down |
| | | ↑ | rotate forward |
| 5 | E | →↔ | hit right |
| | | ↶ | rotate left |
| 6 | F | ↔↔↔↔ | hit twice to each side |
| | | . | do nothing |
| 7 | F | . | do nothing |

USAGE

- Cut: make gestures along with the sound. The vertical green line indicates a successfully segmented gesture.
- Perform: make a gesture to play the corresponding sound section in a loop.

REFERENCES

1. Mendoza, J.I. (2023) Delayed Gestural Control of Musical Sound using Online Unsupervised Temporal Segmentation
2. Mendoza, J.I. (2022) Segmentation boundaries in accelerometer data of arm motion induced by music: Online computation and perceptual assessment.