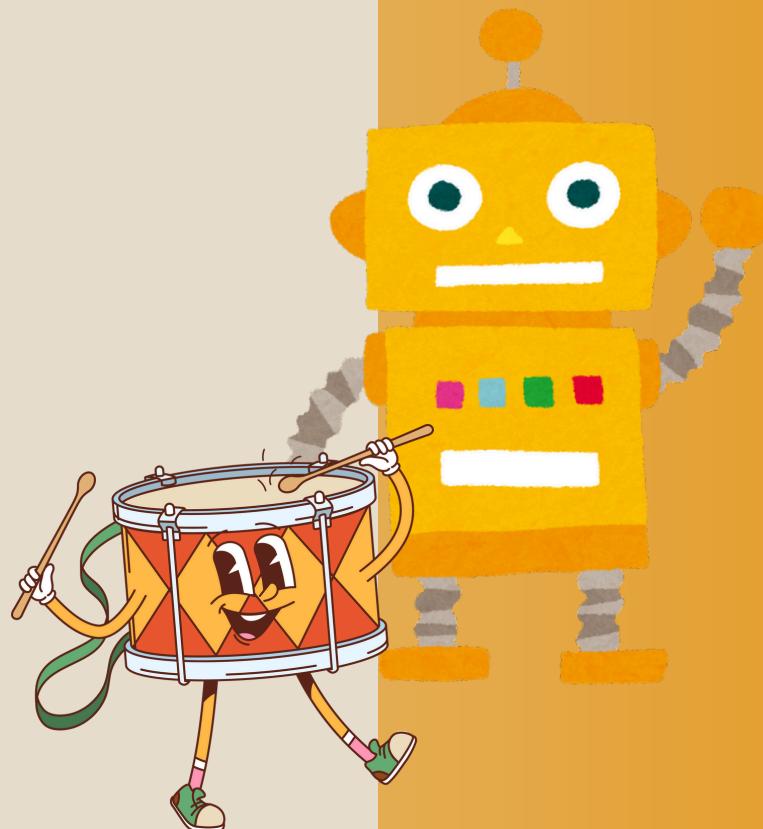


ROBOKIDS

Applied Project

SEREN SARAC YILMAZ
INTERDISCIPLINARY COLLOQUIUM III

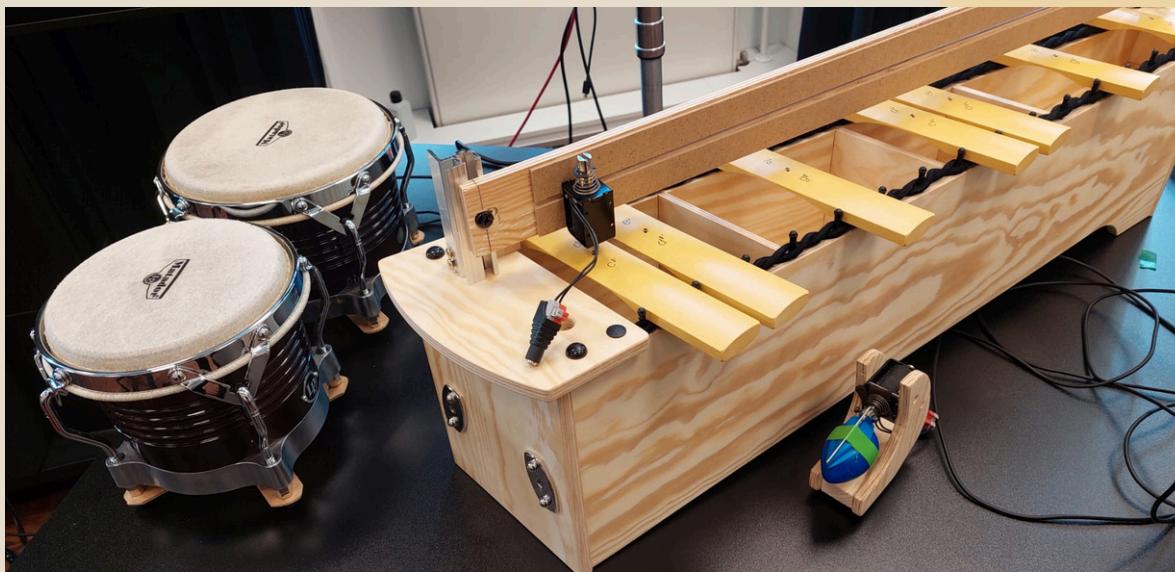


INTRODUCTION

- This presentation summarizes the current development stage of the Robo-Percussion project.
- Since the idea presentation, significant progress has been made in dataset creation, AI model training, and hardware preparation.
- The goal remains: AI-assisted musical co-creation for students and children.

INSTALLATION





DATA SET

Fachdidaktik EMP 2
Hochschule für Musik Nürnberg

SAR MAKARYI

Begleitmöglichkeiten

Grundton (3 Viertel)



Grundton (Metrum)



Parallelenschlag



Wechselschlag



Textrhythmus 1



Sar, sar, sar.

Textrhythmus 2



Ma - ka - ra - yi.

Klangfarbe (Schlägelstile)



Glissando



Akzente



Spiel mit 3 Schlägeln



Wechselschlag



Bordun



Rhythmische Variation



Variation der Tonhöhe



Tremolo



Gegenbewegung



Aufsteigend, zweistimmig



Klangfarbe (Holz)



Eine bewegte Hand



Rhythmische Verschiebung



Schlussmotiv



Link Ext Tap 120.00 4 / 4 0.0 1 Bar b[#] C Major 1. 1. 1 + 3. 1. 1 4. 0. 0 A Reverb B Delay Main

Collections Content ►

Favorites Type ►

Sounds ►

Drums ►

All Sounds Drums

Instruments

Audio Effects

MIDI Effects

NN Modulators

Plug-Ins

Clips

Samples

Grooves

Tunings

1 item selected

Groove Name Base Quantize Timing Random Velocity

Swing 1/16 0% 100% 0%

Groove Pool Global Amount 0%

Pattern10

Clip Start Set End Set 1. 1. 1 2. 1. 1 Duplicate Loop Position Set Length Set 1. 1. 1 1. 0. 0 Signature Groove 4 / 4 None Scale C Major Launch Pitch & Time C1 - F1 Fit to Scale Invert 0 sd Add Interval Stretch x2 /2 Grid Set Length Velocity Randomize 100 Ramp 100 127

Notes Envelopes MPE 1/64

Drop Files and Devices Here

A Reverb B Delay Main

1 2 3 4

Audio To Main

Audio To Main

Sends A B Sends A B

Sends A B Sends A B

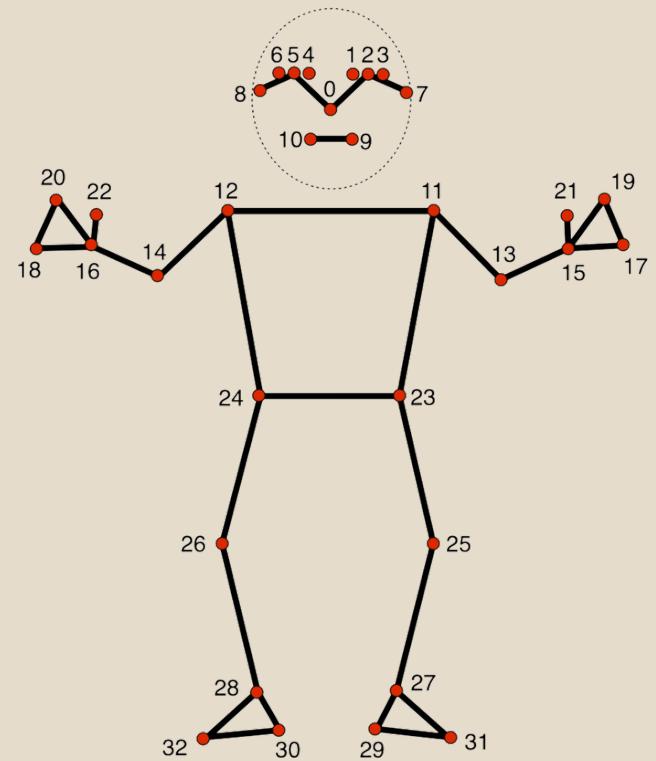
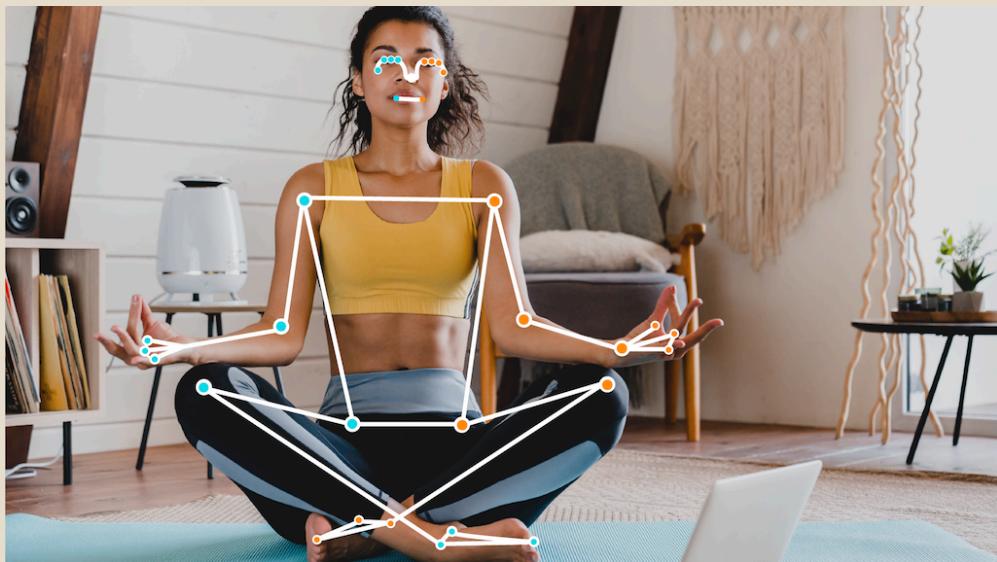
Sends A B Sends A B

Solo

6

Download Live 12.3 - You'll be notified when the update is ready. [Click here for release notes.](#)

CODING MEDIPIPE



Google AI. (n.d.). MediaPipe Pose Landmarker [Computer software].
Retrieved December 2, 2025, from:
https://ai.google.dev/edge/mediapipe/solutions/vision/pose_landmarker

Agents Editor

Users > musicvan > Desktop > KidsMusicController-Package > LASTONE_ROBOKIDS.py > ...

```

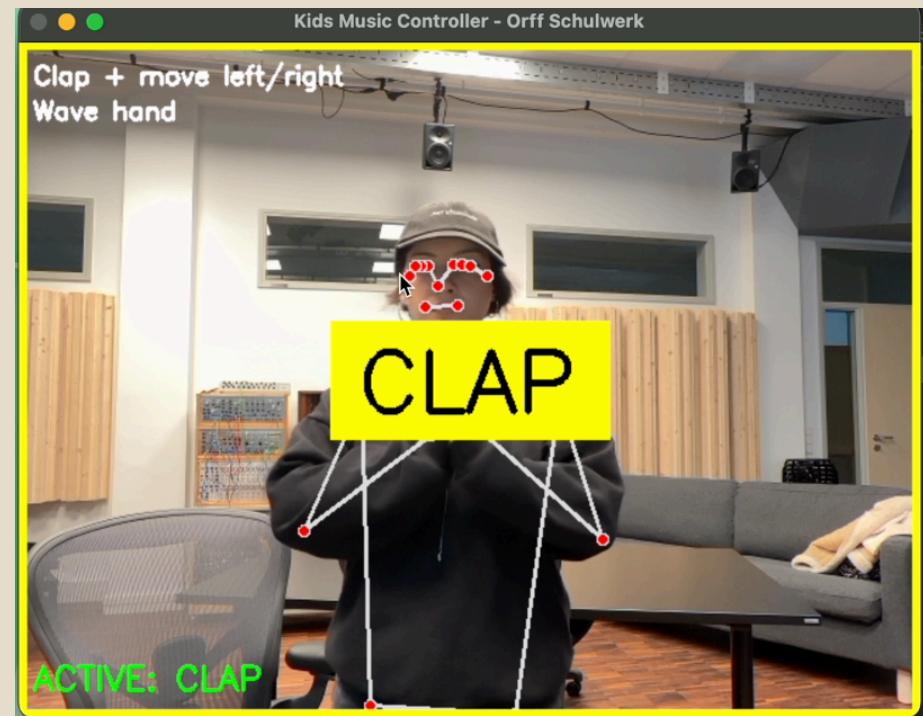
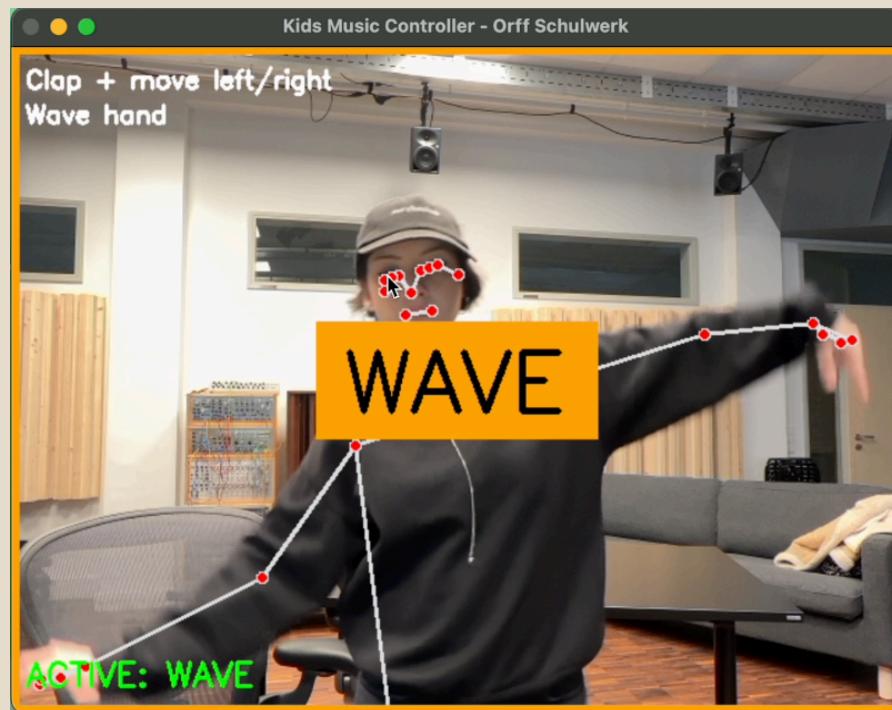
1 #!/usr/bin/env python
2 """
3 Kids Music Controller - Orff Schulwerk Approach
4 Body movement control for educational music software
5 Perfect for children and music education installations
6 """
7
8 import cv2
9 import mediapipe as mp
10 import rtmidi
11 import time
12 import ssl
13 import math
14
15 # Fix SSL certificate issue
16 ssl._create_default_https_context = ssl._create_unverified_context
17
18 # ===== KID-FRIENDLY SETTINGS =====
19 MIDI_PORT = "IAC Bus 11 Bus 1"
20 MIDI_CHANNEL = 1
21
22 # Gesture detection settings
23 GESTURE_COOLDOWN = 0.15 # Slight delay for stability
24 GESTURE_THRESHOLD = 0.1 # Lower threshold for easier detection
25
26 # Continuous control settings
27 CONTINUOUS_CONTROL = True # Enable continuous control while in gesture pose
28 CONTROL_SENSITIVITY = 7.5 # Slightly faster response for clap
29
30 # Visual feedback colors (BGR format)
31 COLORS = {
32     'clap': (0, 255, 255), # Yellow
33     'wave': (0, 165, 255), # Orange
34     'default': (255, 255, 255) # White
35 }
36
37 # Smoothing and response settings
38 # - Lower smoothing = faster response, higher = smoother but slower
39 # - Max delta clamps how fast the CC can change per frame
40 SMOOTH_CLAP = 0.50 # Balanced smoothing for faster response
41 SMOOTH_WAVE = 0.55 # Balanced smoothing for faster response
42 MAX_DELTA_CLAP = 4 # Allow a bit faster knob catch-up
43 MAX_DELTA_WAVE = 4 # Allow a bit faster knob catch-up

```

Review next file >

Cursor Tab Ln 1, Col 1





g

Kids Music Controller - Orff Schulwerk

Clap + move left/right
Wave hand

READY – Make a gesture!

Devices

- Delay: Expression, Generative, Hardware Control, Modulator, Racks, Sequencer
- Utility
- Genres: Classical, Gospel, Hip Hop, House, Indie, Jazz, Pop, R&B, Rock, Soul, Techno, Trap
- Creator: Ableton User
- Name: Arpeggiator, Bouncy Notes, CC Control, Chord, Envelope MIDI, Expression Control, Expressive Chords, MIDI Effect Rack, MIDI Monitor, MPE Control, Note Echo, Note Length, Pitch, Random, Scale, Shaper MIDI, Velocity
- Tags: Expression, Hinzufügen...

1. MIDI Xylophone Bongo + Shaker

2. Reverb B Delay Main

3. RoboKIDS

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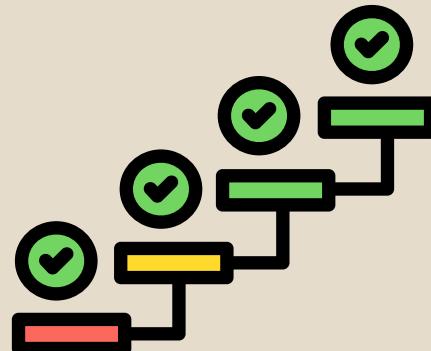
728. Pattern2

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NEXT STEPS

- Movements and melodies used in ORFF Schulwerk education will be added.
- Adjustments will be made in the code so that the rhythms stop when paused.
- Control in Ableton will be made closer to accurate.
- The workshop sequence will be designed from start to finish, and trials with students will begin around January.



**THANK YOU FOR
LISTENING**

**SEREN SARAC YILMAZ
INTERDISCIPLINARY COLLOQUIUM**