# MaxGrooVAE

Computational Creativity Project March 2022

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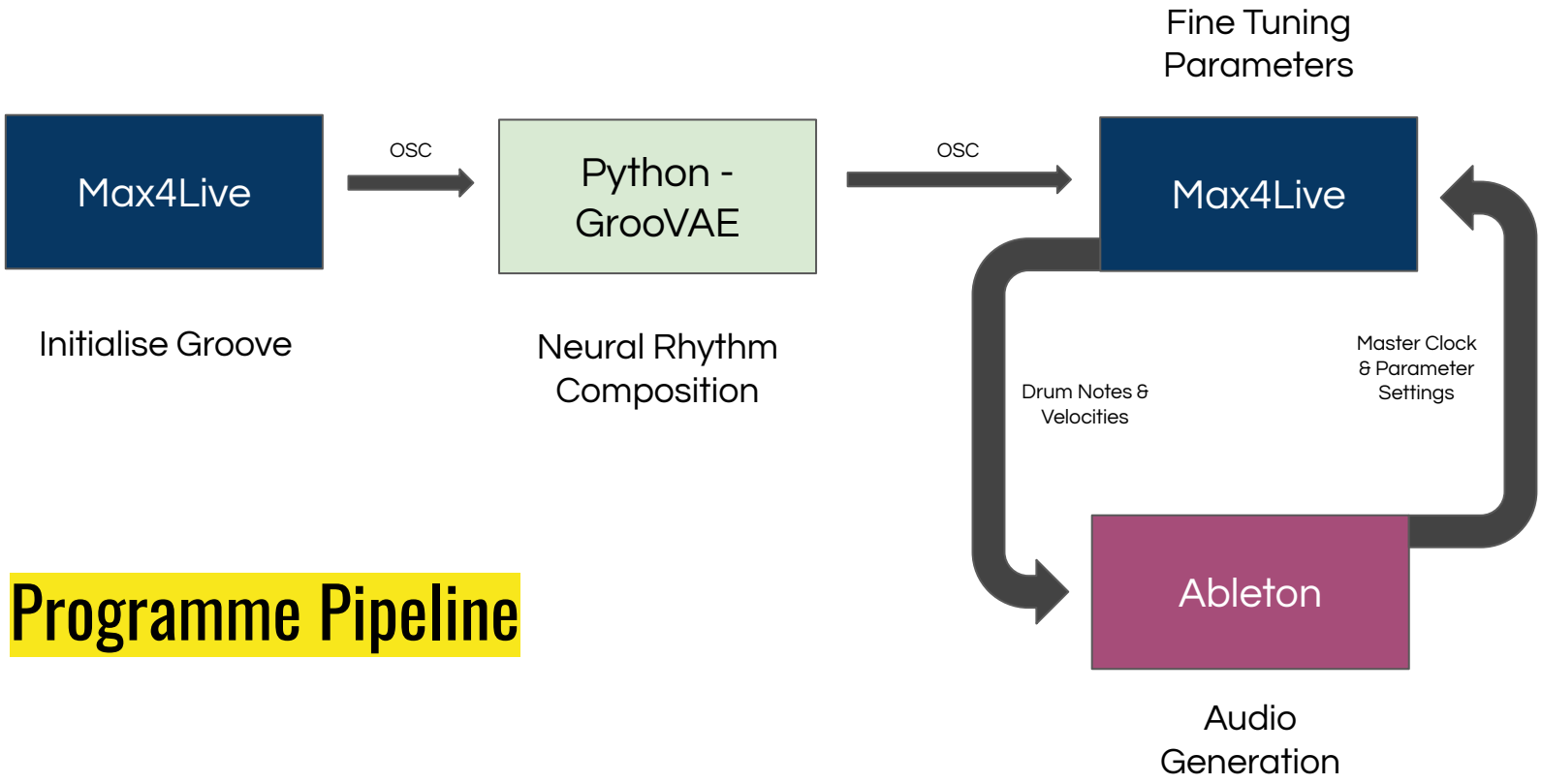
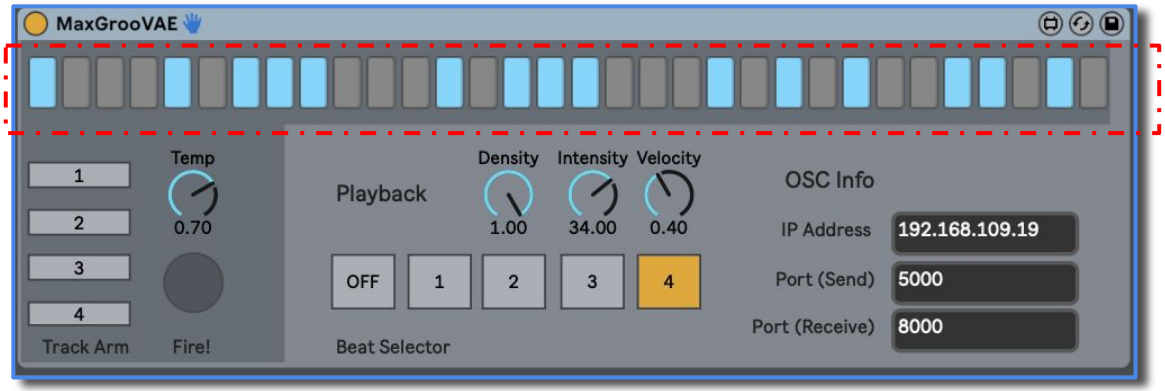
# Programme Pipeline



# Groove Input

- 2 Bars of 4-4 Time
- 1/16th note (1/4th beat) quantization level
- No Velocity information



# Python-OSC

- Max communication via OSC,
  - Blocking Server
- Github Repository: https://github.com/raraz15/MaxGrooVAE

```
Done!
Listening...
   Send IP: 192.168.109.72 Port: 7000
Receive IP: 192.168.109.19 Port: 5000

Groove Received with Temperature 1.000.
Composing...
0: ['Kick', 'Snare (Head)', 'HH Closed (Bow)', 'HH Open (Bow)', 'Tom 1']
1: ['Kick', 'Snare (Head)', 'HH Closed (Bow)', 'Ride (Bow)']
2: ['Kick', 'Snare (Head)', 'HH Closed (Bow)', 'HH Open (Bow)']
3: ['Kick', 'Snare (Head)', 'HH Closed (Bow)', 'HH Open (Bow)']
Sent all the Compositions in: 0.206seconds.

Groove Received with Temperature 0.795.
Composing...
0: ['HH Closed (Bow)', 'HH Open (Bow)', 'Ride (Bow)']
1: ['Kick', 'Ride (Bow)']
2: ['Snare (Head)', 'HH Open (Bow)', 'Ride (Bow)']
3: ['Kick', 'Tom 2', 'Tom 1 (Rim)']
Sent all the Compositions in: 0.062seconds.
```

# GrooVAE

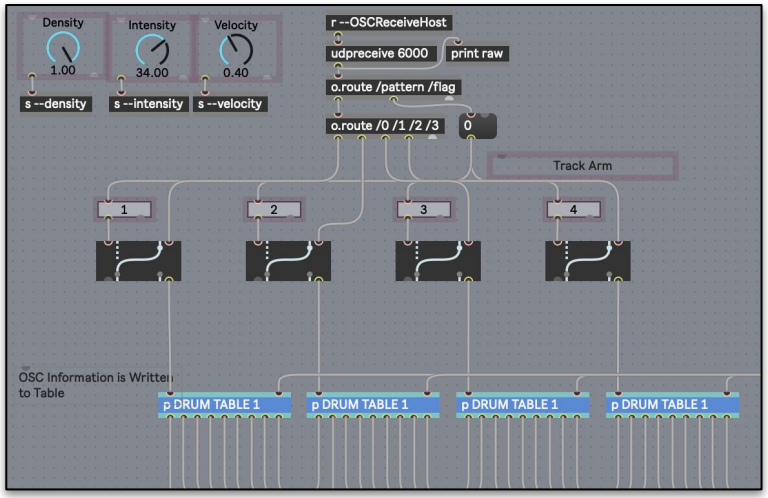
- GrooVAE: MusicVAE for Drum Composition
  - Groovae_2bar_tap_fixed_velocity
  - Batch Processing - 4 Compositions at a time for each Groove
- 9 Drums
- 1/64th beat quantized outputs

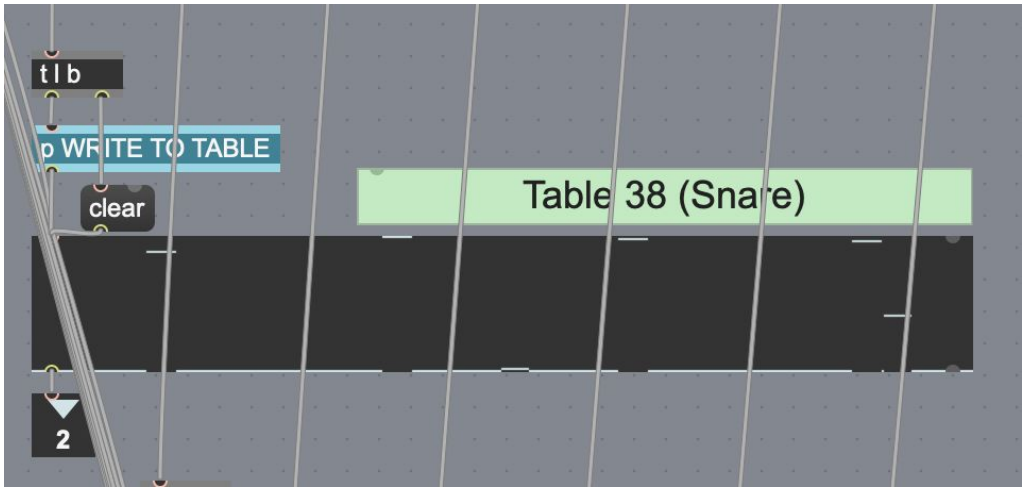
  - Kick
  - Snare (Head)
  - HH Closed ( Bow)
  - Tom 2
  - HH open (Bow)
  - Tom 1
  - Crash 1 (Bow)
  - Tom 1 (Rim)
  - Ride (Bow)

https://magenta.tensorflow.org/groovae

# Table Storage & Audio Generation

- ❏ Write each drum  voice to a separate table (9 Voices, 4 Rhythms = 36 Tables)
- ❏ Send Ableton tempo info to table to activate the rhythm for playback
- ❏ Final set of velocity/density tweaks before note info is converted to MIDI



# Live Demo

# Q&A

Thanks for Listening!