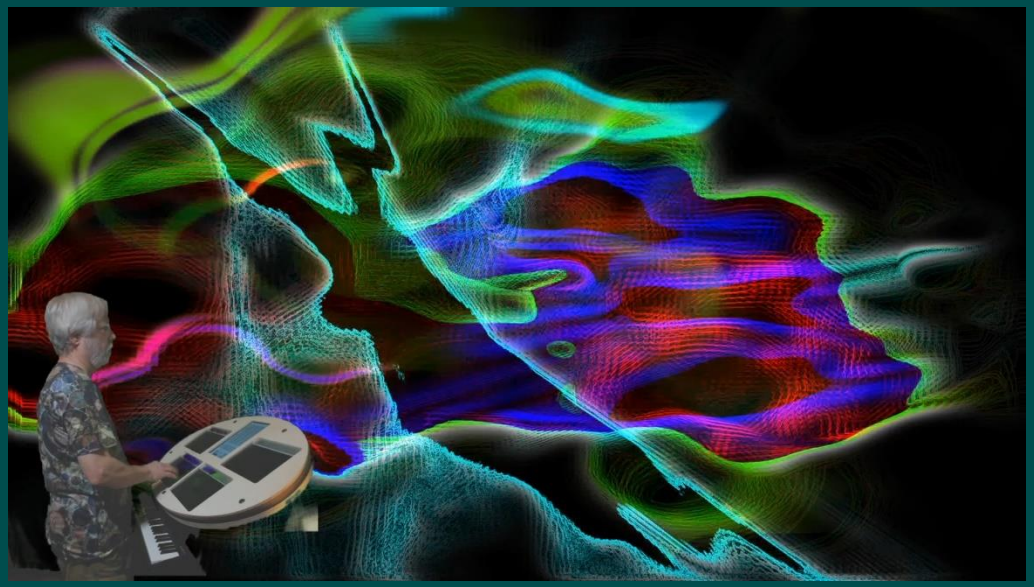
Space Palette Pro

A Visual Music Instrument



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Space Palette Pro

- History
- Implementation
- Workflow
- Performance

History – Fingerworks-based Controller

- Capacitive multitouch with finger area detection
- Extremely responsive, excellent driver support
- First exposure to 3D input

History - Finger Painting with Planets

- Maker Faire 2008

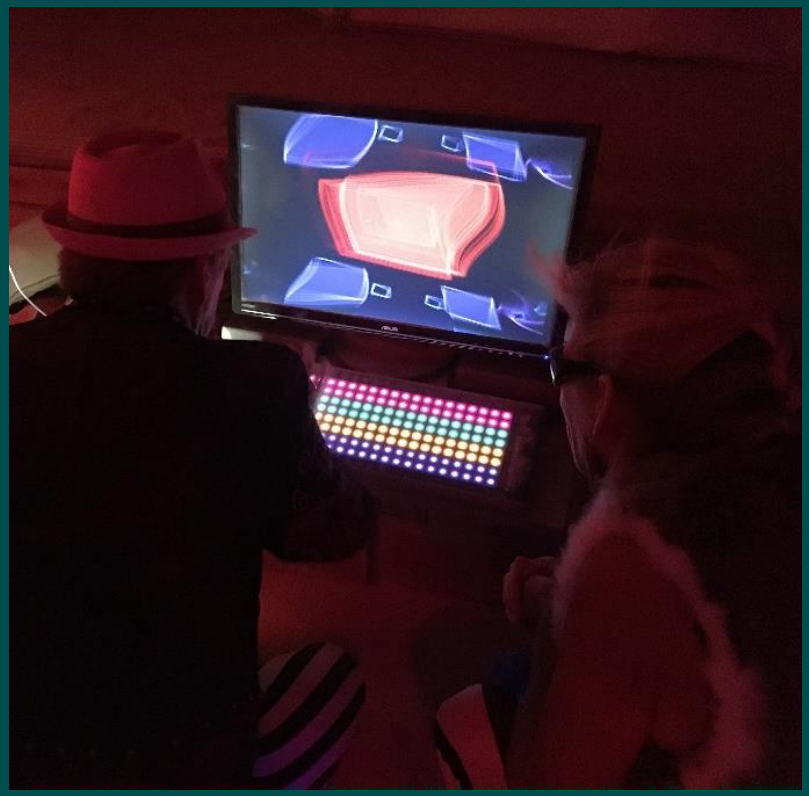
History - LoopyCam

- Camera-based visual performance instrument
- Performer controls camera position and effects with a single integrated device
- Security cameras auto-adjust to low light situations.

Version 1

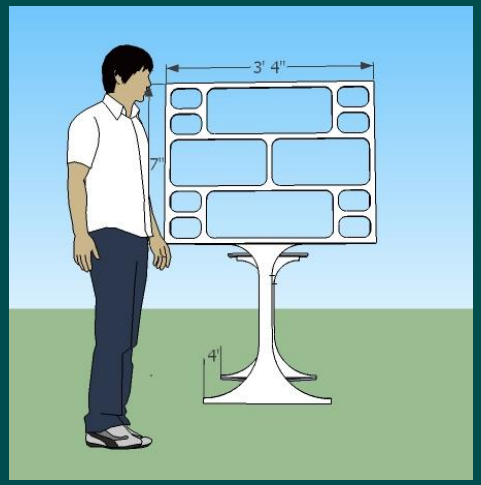
Version 2

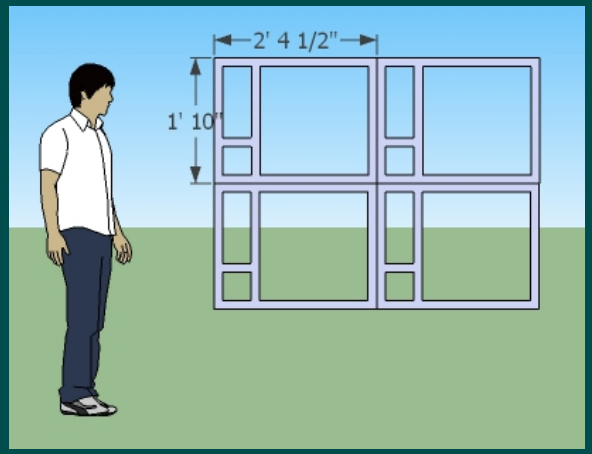
History - UniLooper

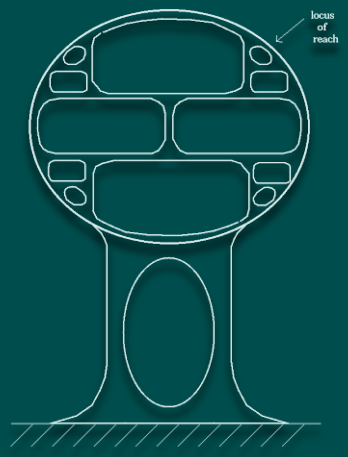


- LinnStrument for input
- 4-track MIDI looper
- Loops trigger visual shapes
- Implemented with KeyKit
- Looping Festival in 2015
- Burning Man in 2016

History - Space Palette Prototypes

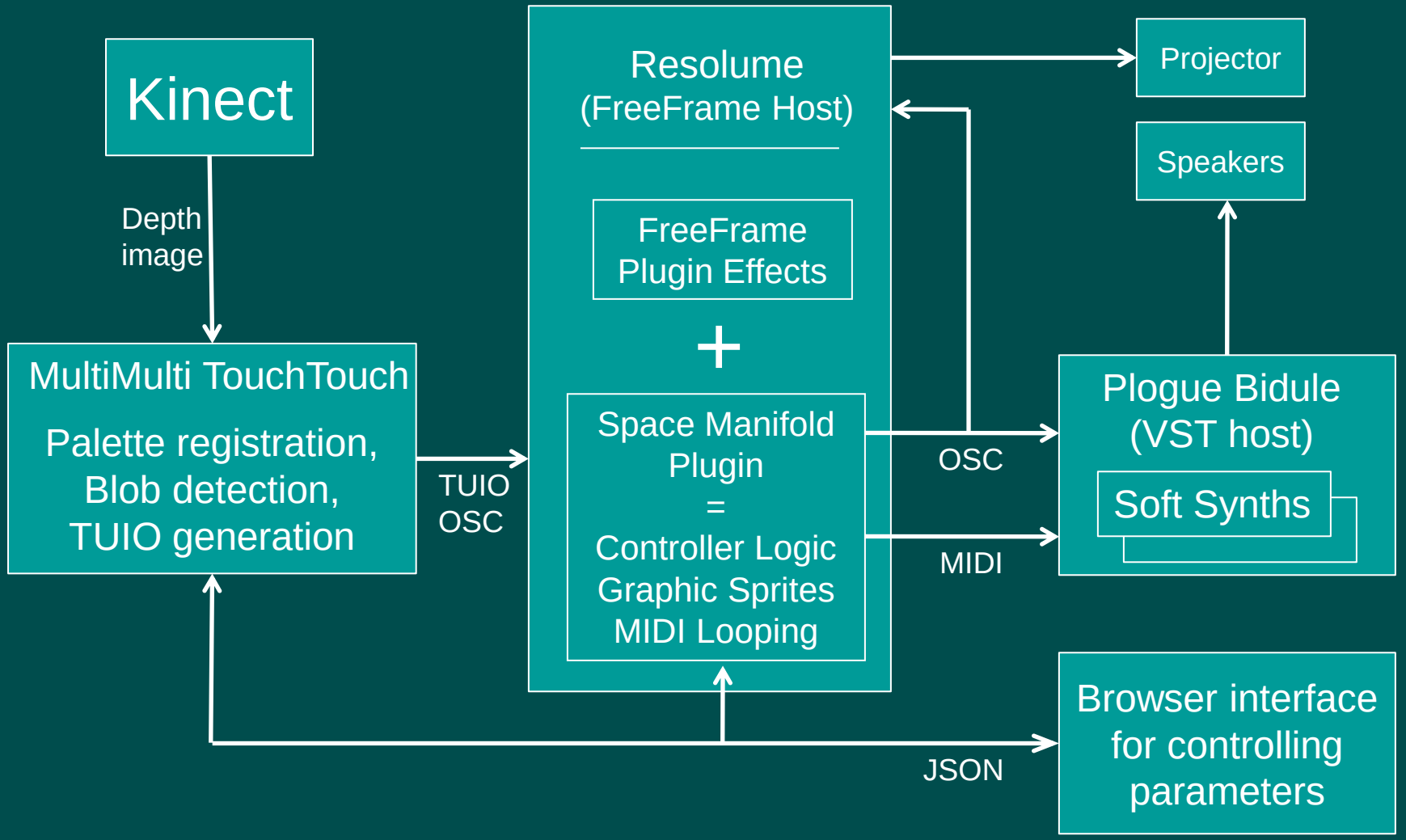






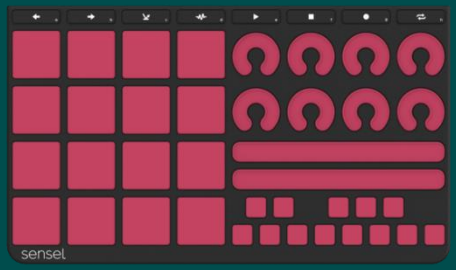
Space Palette - Festival Appearances

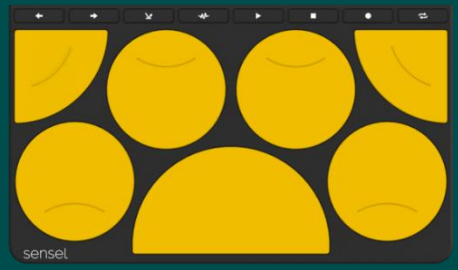
Space Palette Design - 2012



Sensel Morph - a dream come true for 3D input

- 20,000 force-sensing resistors, detects 5g to 5kg
- Raw data is easily obtained
- Overlays for different control layouts





- Magnets in overlays allow detection and swapping
- No overlay == blank canvas

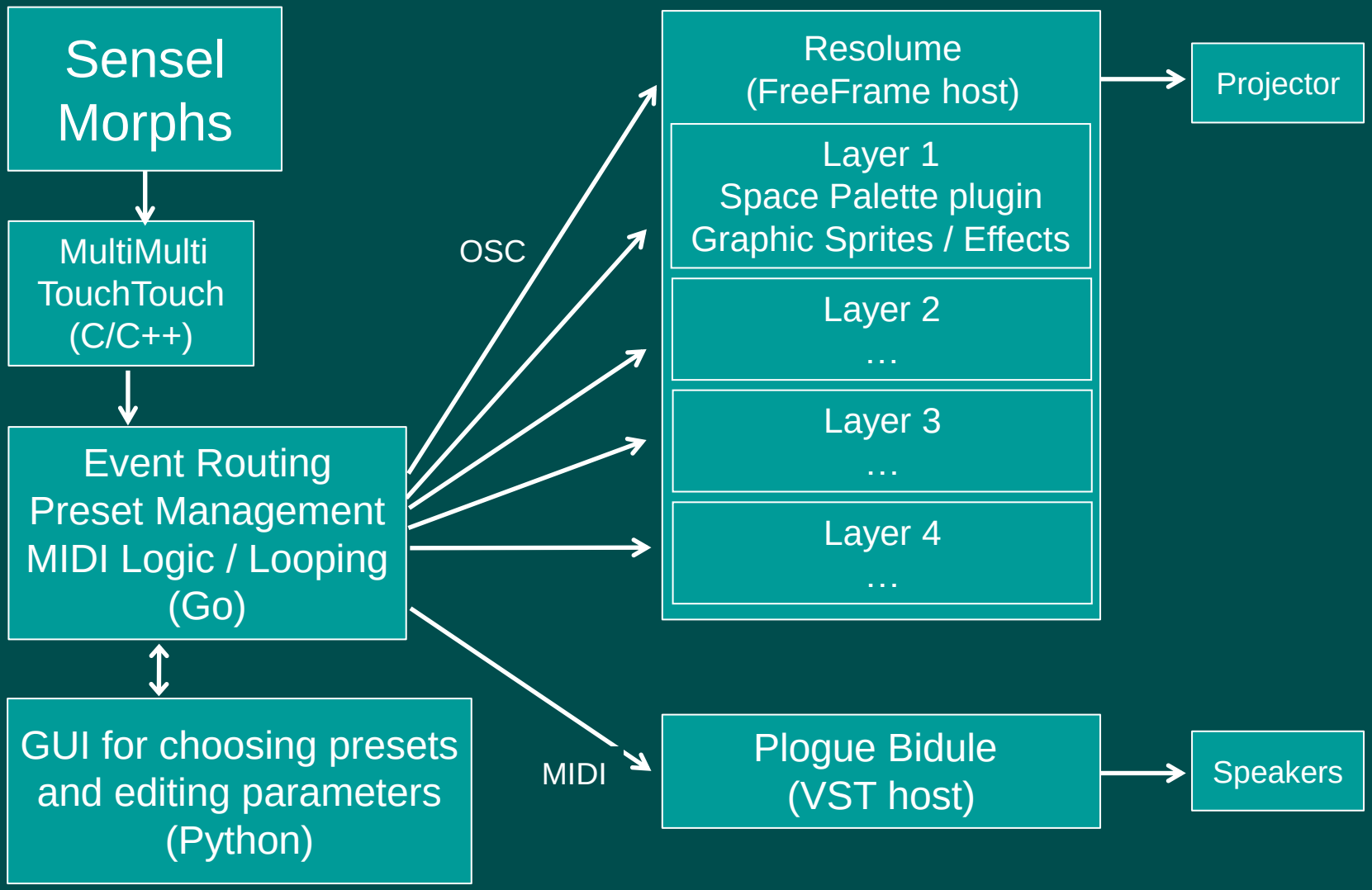
Space Palette Pro

- Differences from Space Palette:
  - Sensel Morphs and a touchscreen
  - Pressure rather than depth
  - Five 3D cursors per hand
  - Separate visual layers, greater variety

Space Palette Pro - Overview

- Each of the 4 Morphs has independent control of:
  - Gesture looping; gestures generate both MIDI and graphics
  - Visual effects applied to graphics within Resolume
  - Sounds (Omnisphere 2)
- Python-based GUI for preset selection and editing
- Go-based router
  - Handles all input - TUIO, MIDI, APIs
  - Generates MIDI output
  - Realtime looping of gestures
  - APIs for parameter and preset control (used by GUI)

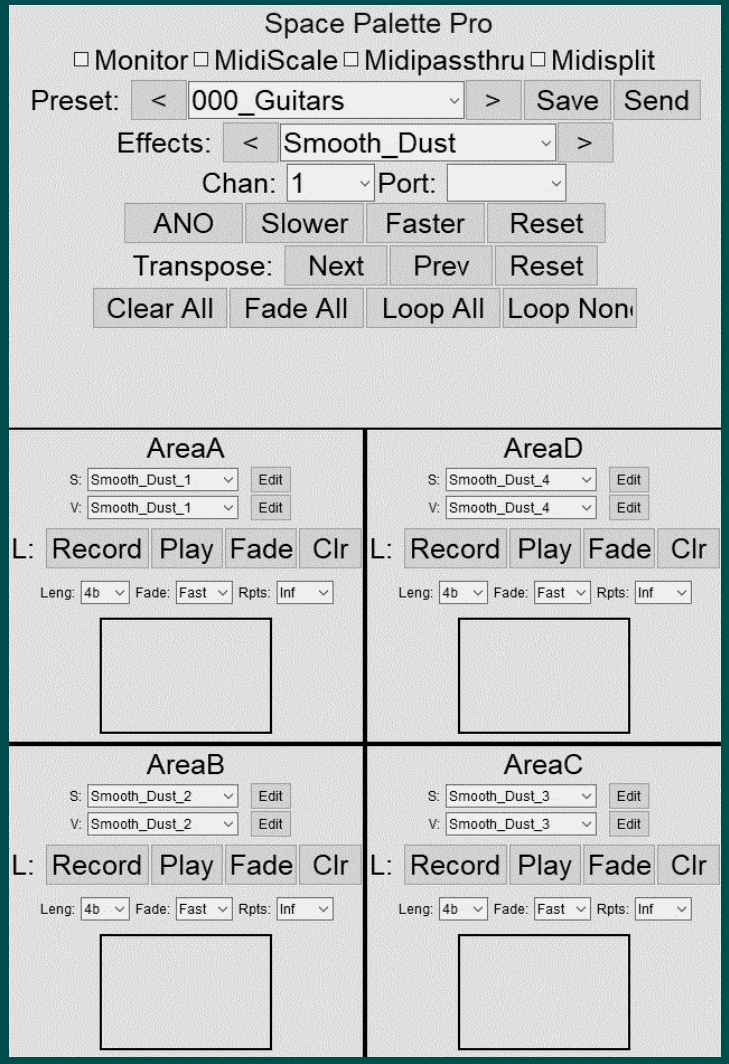
Space Palette Pro - Design



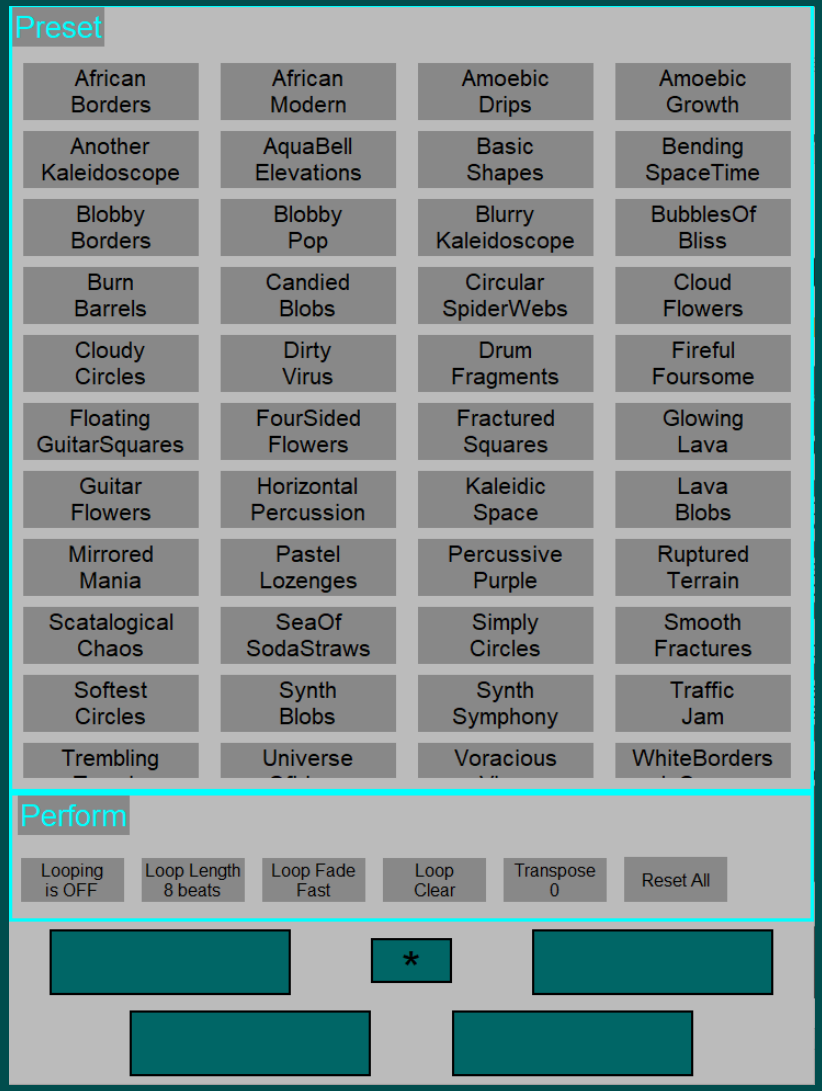
Space Palette Pro - GUI

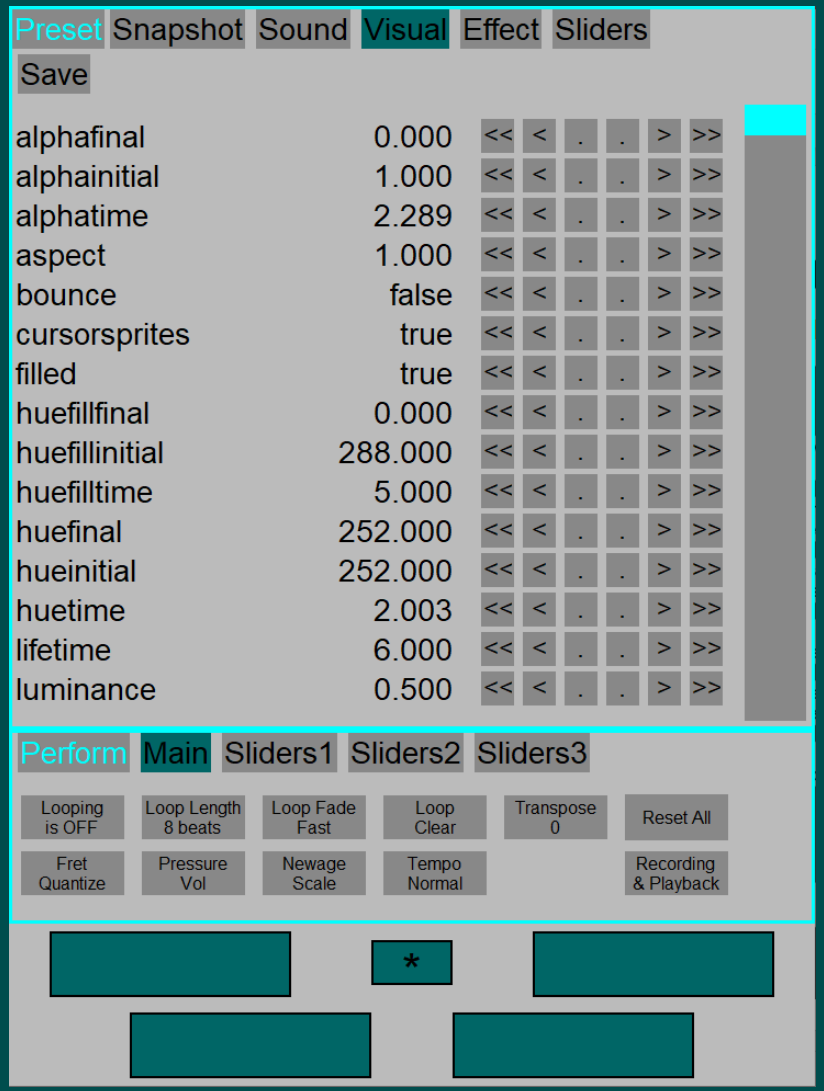
Casual

Performing



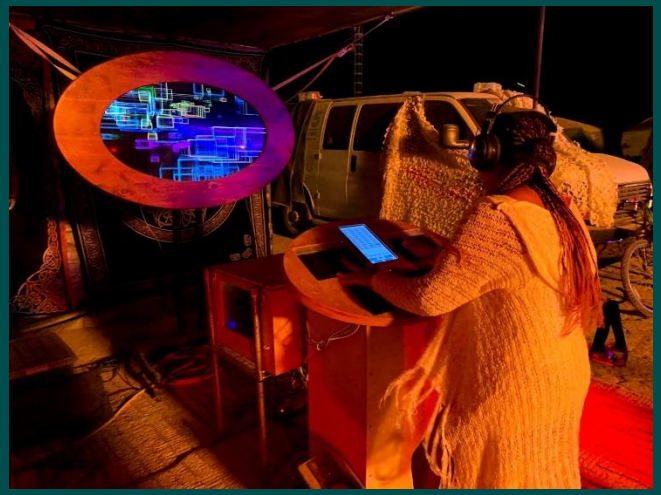
Space Palette Pro – Performing GUI (take 3)





Space Palette Pro - Burning Man 2019

- Photon Salon



- PlayAlchemist Grand Pyramid

Movie

Future Direction Possibilities

- ISF (Interactive Shader Format) instead of FreeFrame
- Graphics generation in Go
  - Use Spout to send to Resolume (or other visual host)
- More interesting finger painting behaviour
  - Two-handed control
  - Pressure semantics
- More interesting musical behavior
  - Phrases rather than notes
  - Scanning sequences

Workflow Demo and Performance

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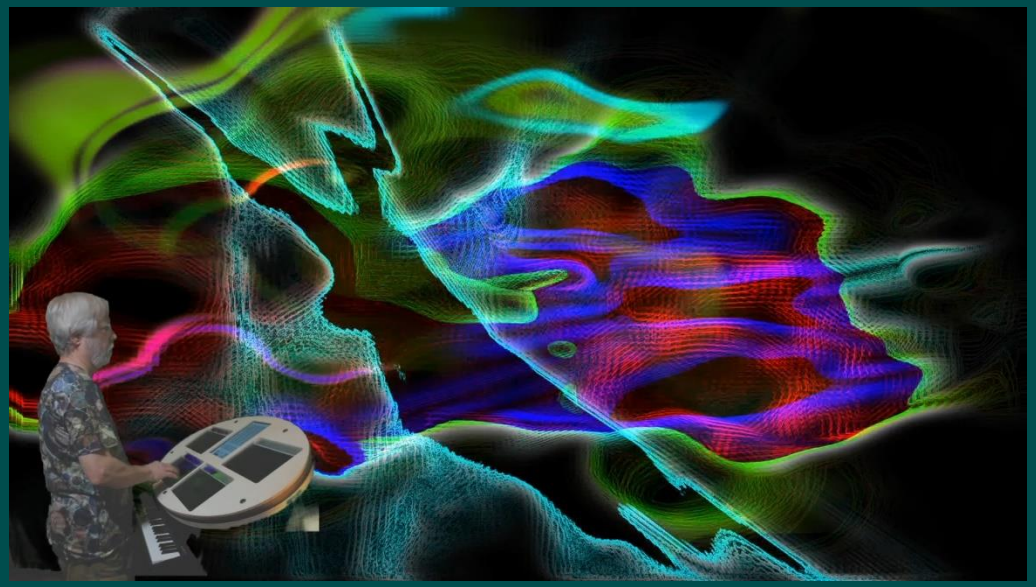

These slides can be found at timthompson.com/talks

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