



FINAL EXAM

December 4th during class

Cumulative - review slides posted tonight

Designed to take about 30 minutes

Wednesday — bring in any questions



NEW INSTRUMENTS AND DIGITAL CONTROLLERS



ACOUSTIC INSTRUMENTS

Sound source and the interface are one

Fixed and relatively transparent mapping

Acoustic + haptic feedback





ELECTRONIC INSTRUMENTS

Sound source and interface more or less independent



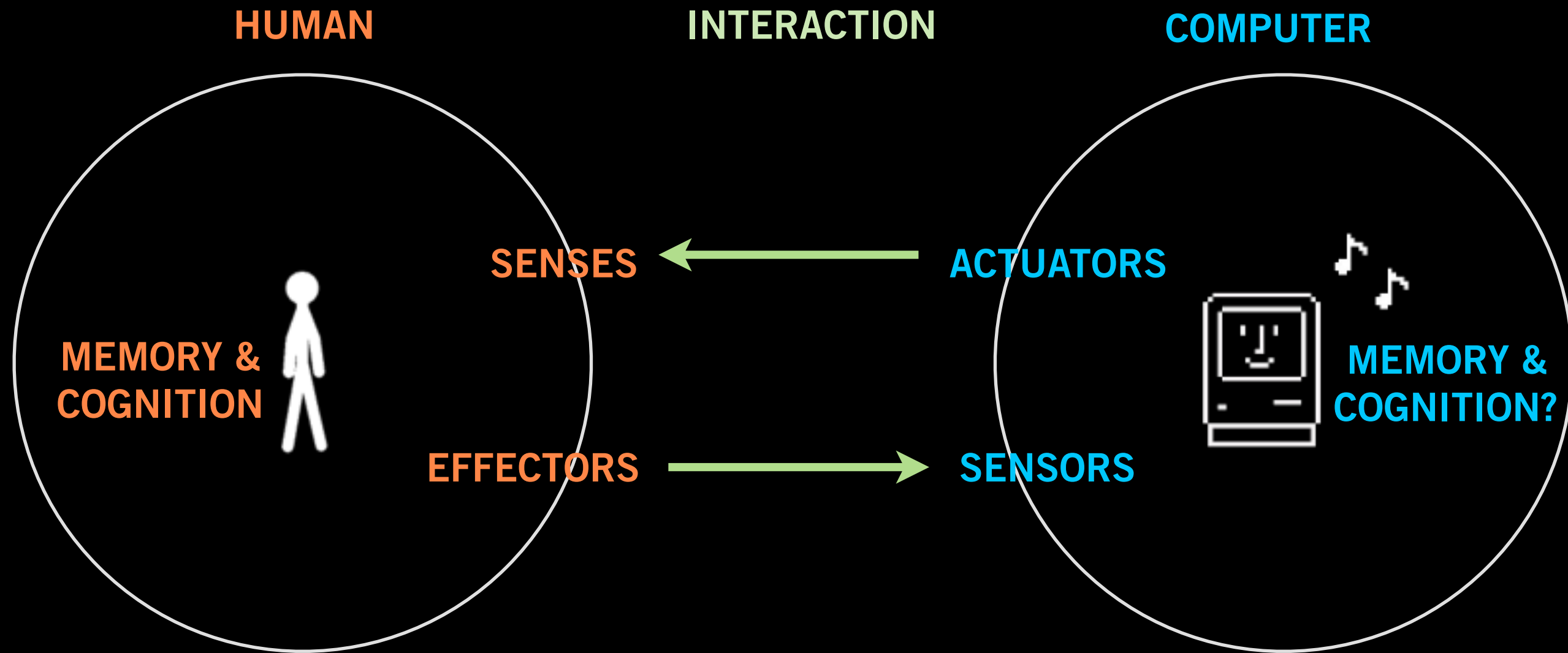
The relationship between sound and control is less transparent



PERFORMING WITH DIGITAL SYSTEMS

Interaction between a human and a system is a two way process: action (control) and feedback

PERFORMING WITH DIGITAL SYSTEMS



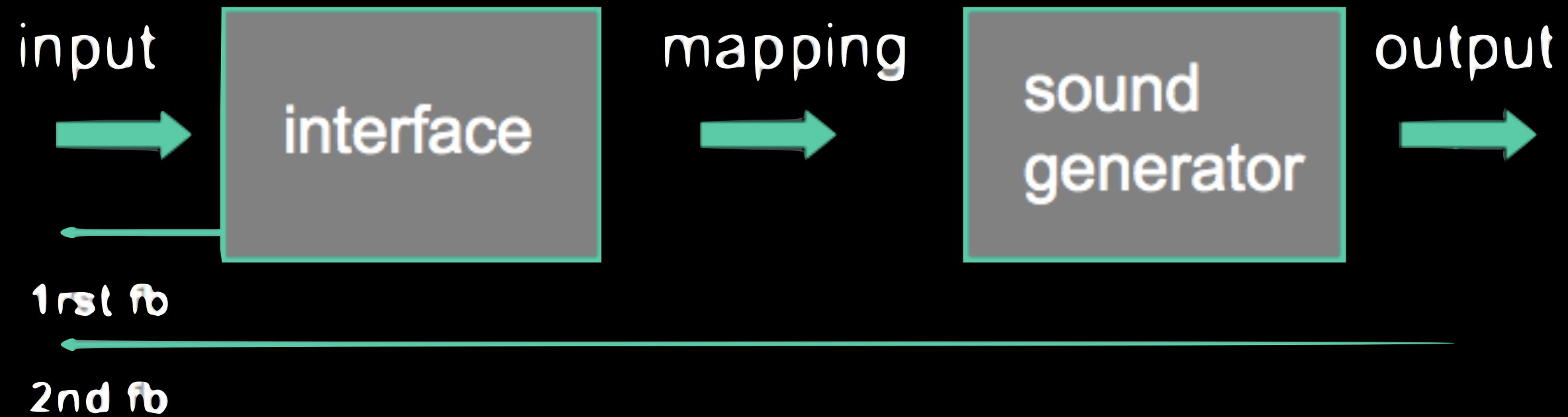


PERFORMING WITH DIGITAL SYSTEMS

Sensors are the sense organs of the machines.

Actuators output electrical energy in sensible forms.

MAPPING



complexity vs. transparency

the relationship between input and result

TYPES OF DIGITAL CONTROLLERS

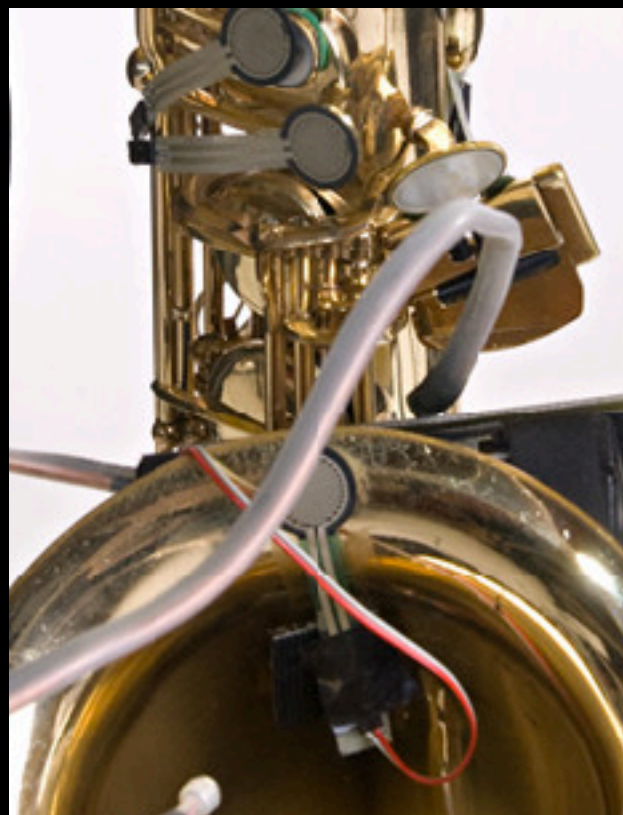
Augmented Instruments

Instrument-like Controllers

Alternate Controllers

Musical Robots (deferred control)

Robots controlling humans (reversed control)



metasax (Burtner)



MIMICS (Rovan)



hyperviolin

AUGMENTED INSTRUMENTS

Augmented instruments are acoustic instruments that have been fitted with sensors so that information concerning gestural parameters can be transmitted in real-time.

The magnetic resonator piano

Continuous note shaping on the acoustic piano





Laser Koto - Miya Masaoka



EWI (Akai)

INSTRUMENT-LIKE CONTROLLERS

Often build upon existing paradigms to add the potentials of electronic synthesis to well-established practices.

Little need to develop new playing techniques



Electronic Trumpet (Yamaha)







ALTERNATE CONTROLLERS

Alternate controllers are not directly modeled on or inspired by existing acoustic instruments

TOUCH-SCREENS AND MULTI-TOUCH CONTROLLERS



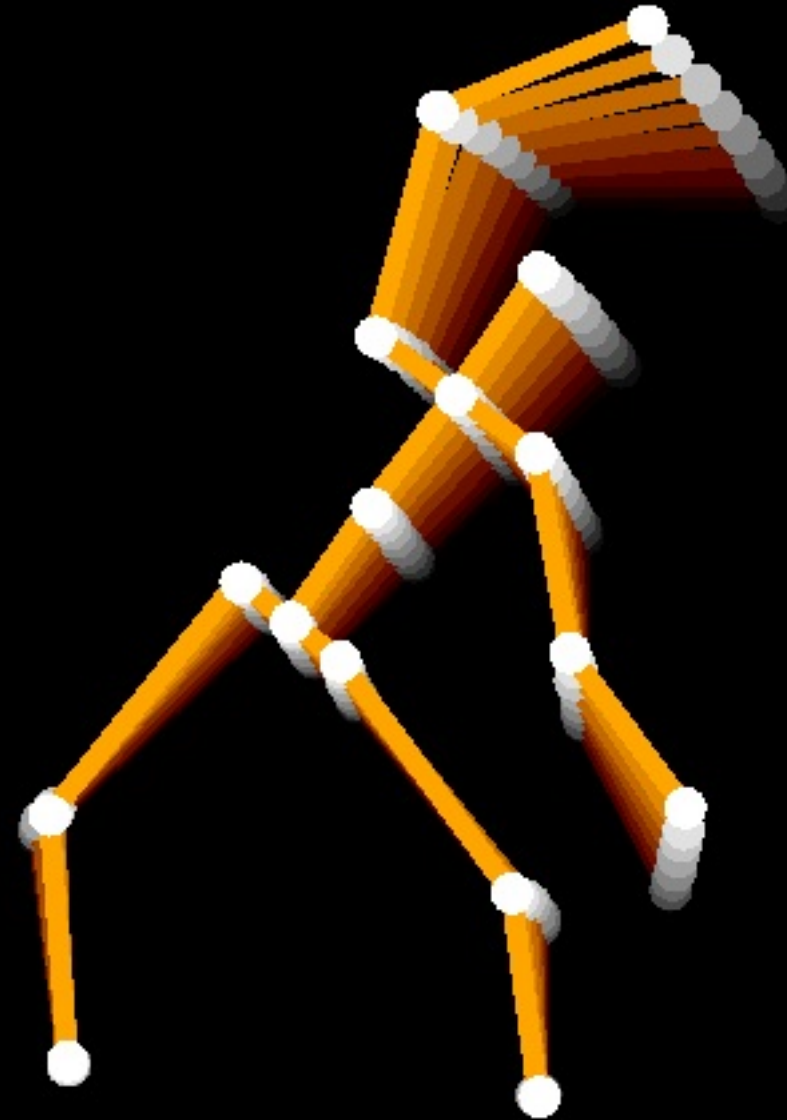




Myriam Bleau - Soft Revolvers

AN
INSTRUMENT
FOR THE
SONIFICATION
OF
EVERYDAY
THINGS

GESTURAL CONTROL

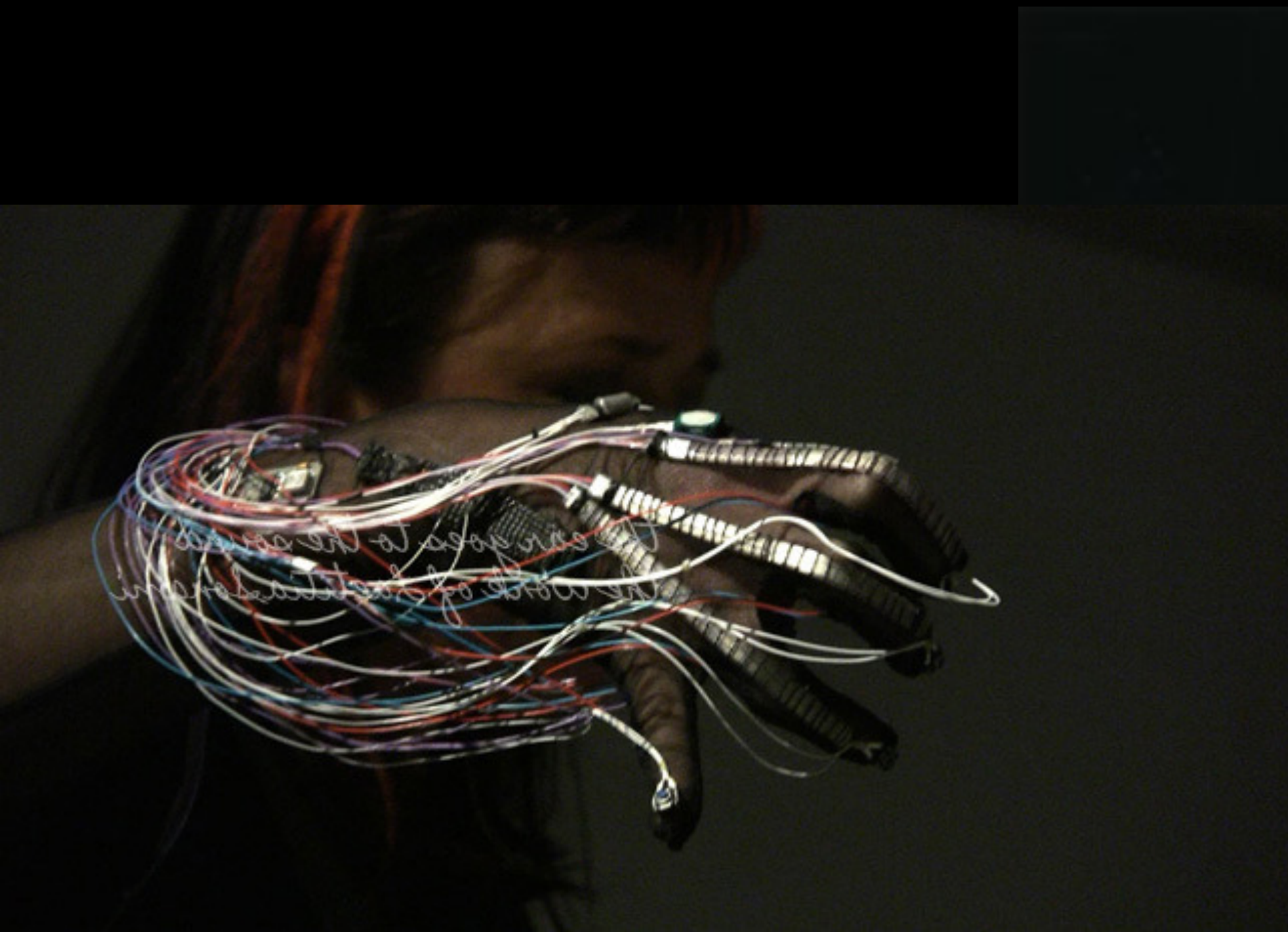




Pamela Z

**composer, performer, and sound
artist who works primarily with
voice and live electronic processing.**

HAND AND GLOVE CONTROLLERS



MICHEL WAISVISZ

Dutch composer, performer and inventor of experimental electronic musical instruments.

He was the artistic director of STEIM in Amsterdam from 1981, where he collaborated with musicians and artists from all over the world.



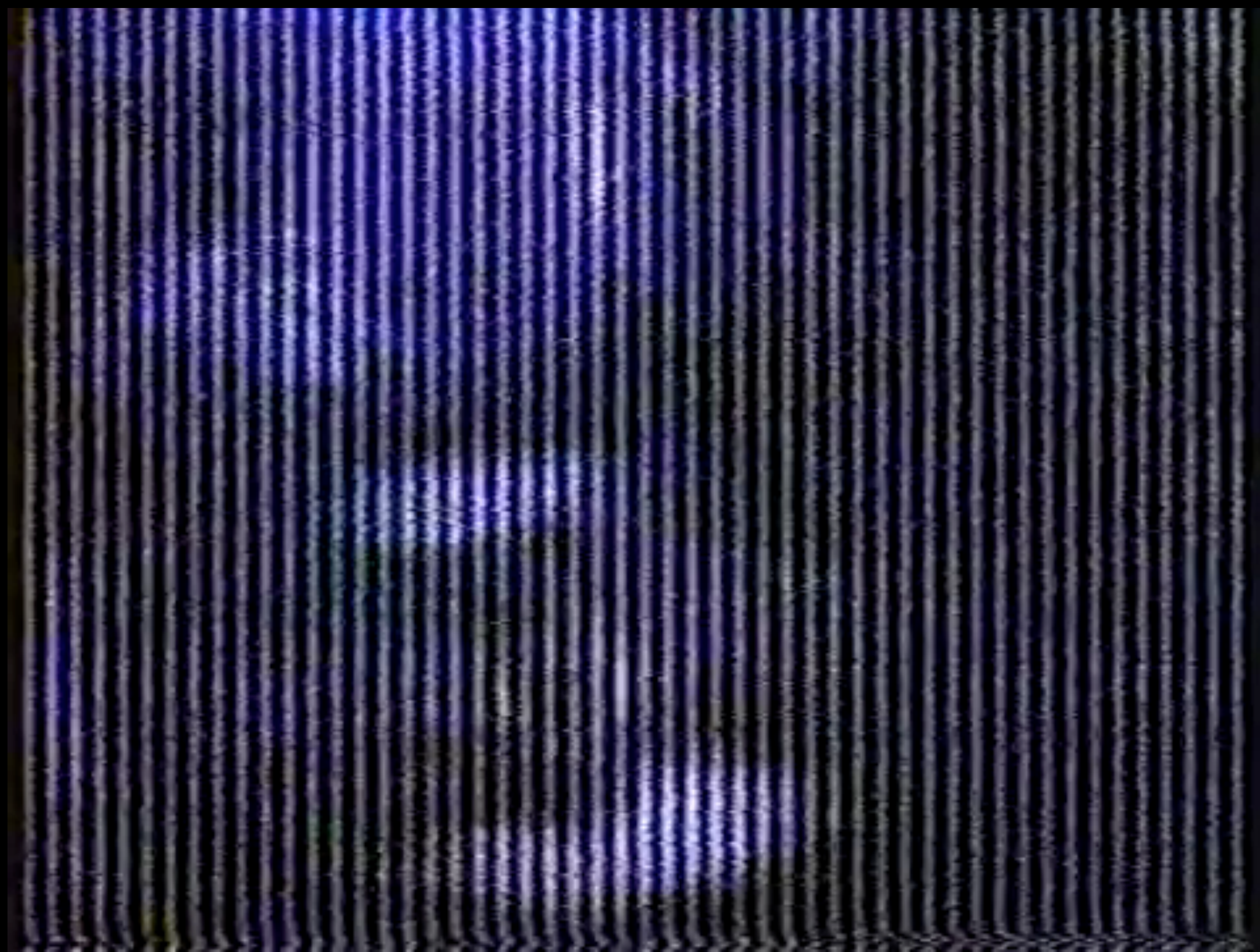


LAETITIA SONAMI

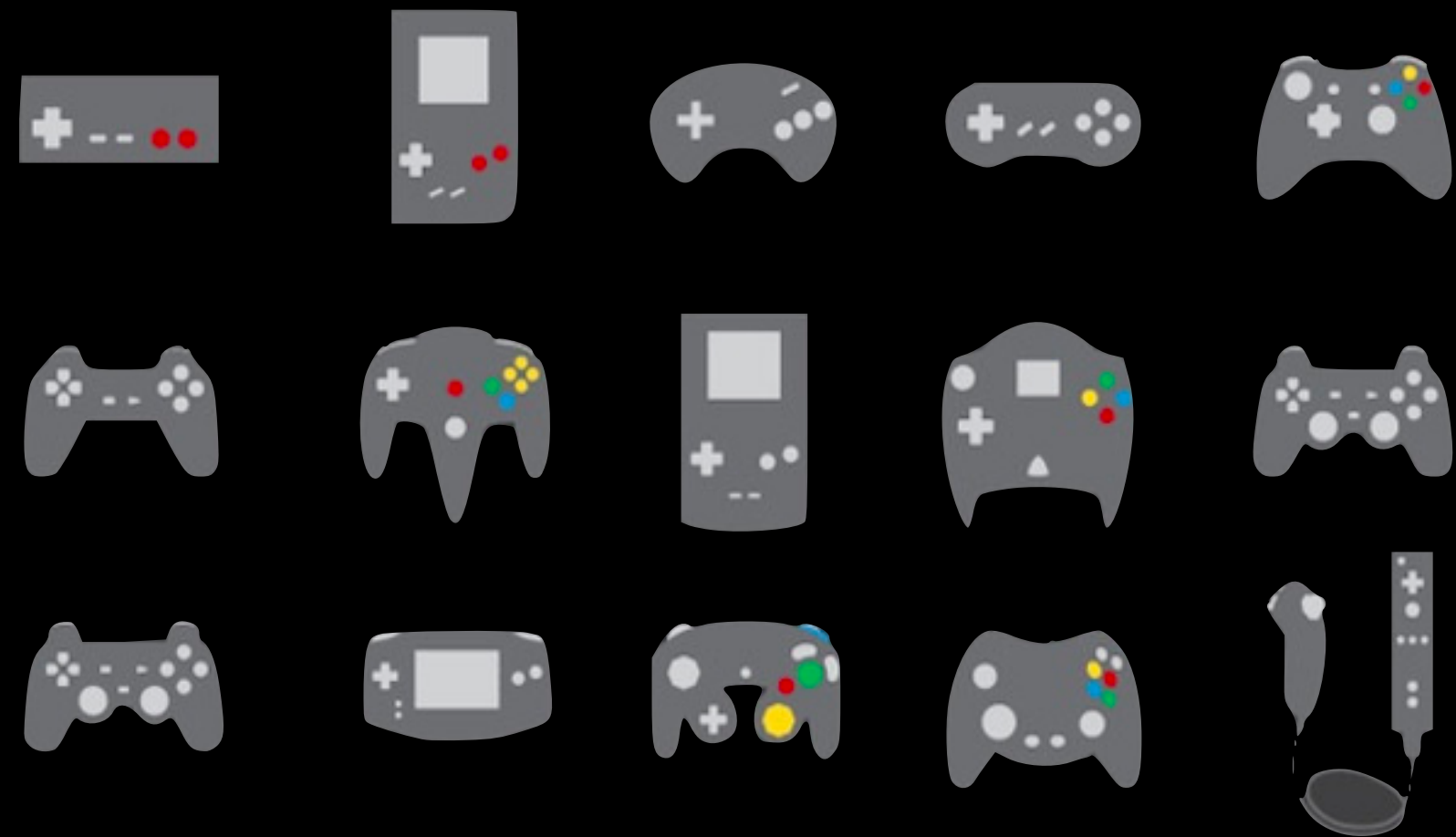
sound artist and performer

Her signature instrument, the lady's glove, allows her to control sounds, mechanical devices, and lights in real-time.



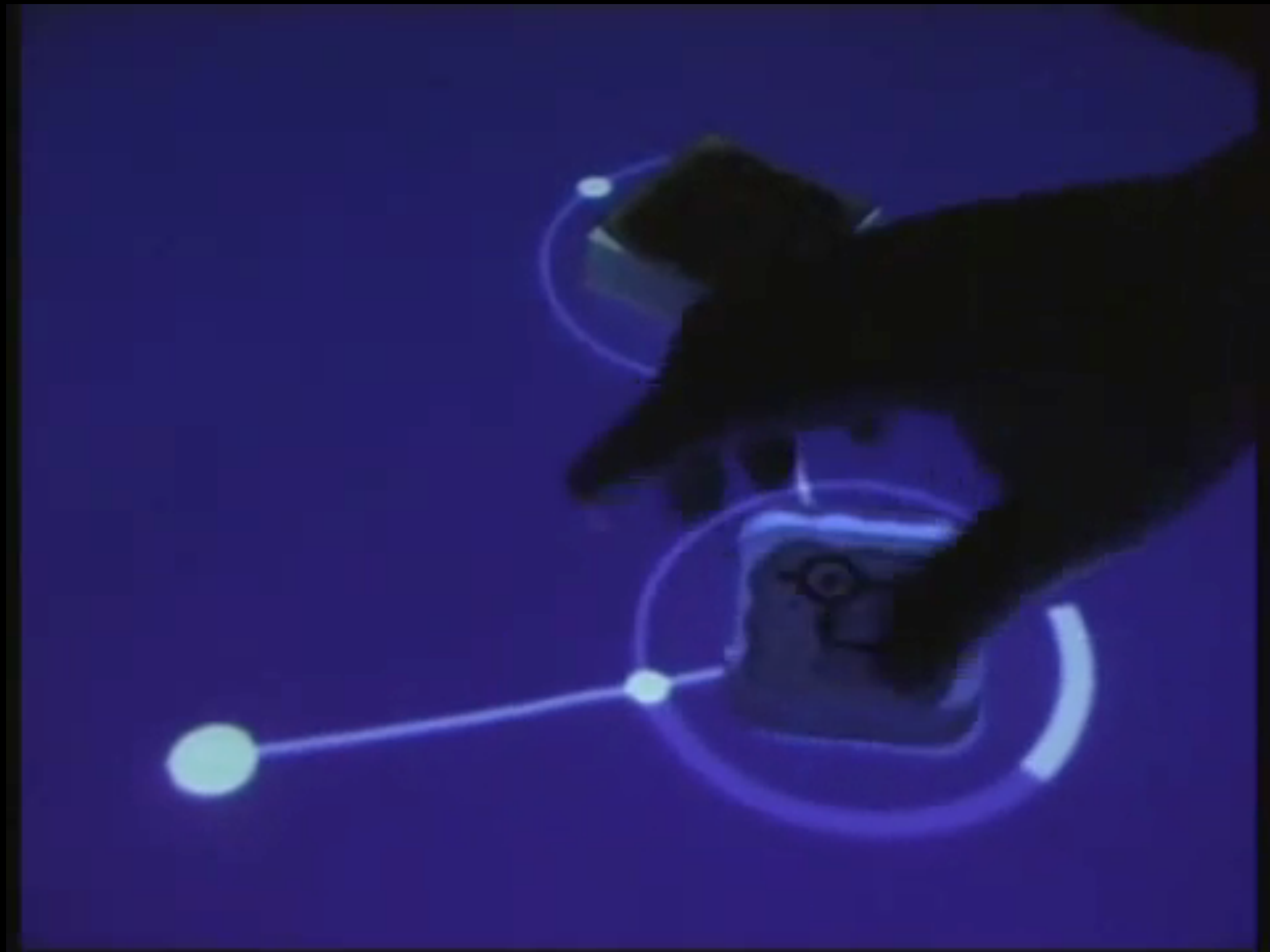


VIDEO-GAME CONTROLLERS



REACTABLE

a tabletop Tangible User Interface that has been developed by the Music Technology Group at the Universitat Pompeu Fabra in Barcelona, Spain

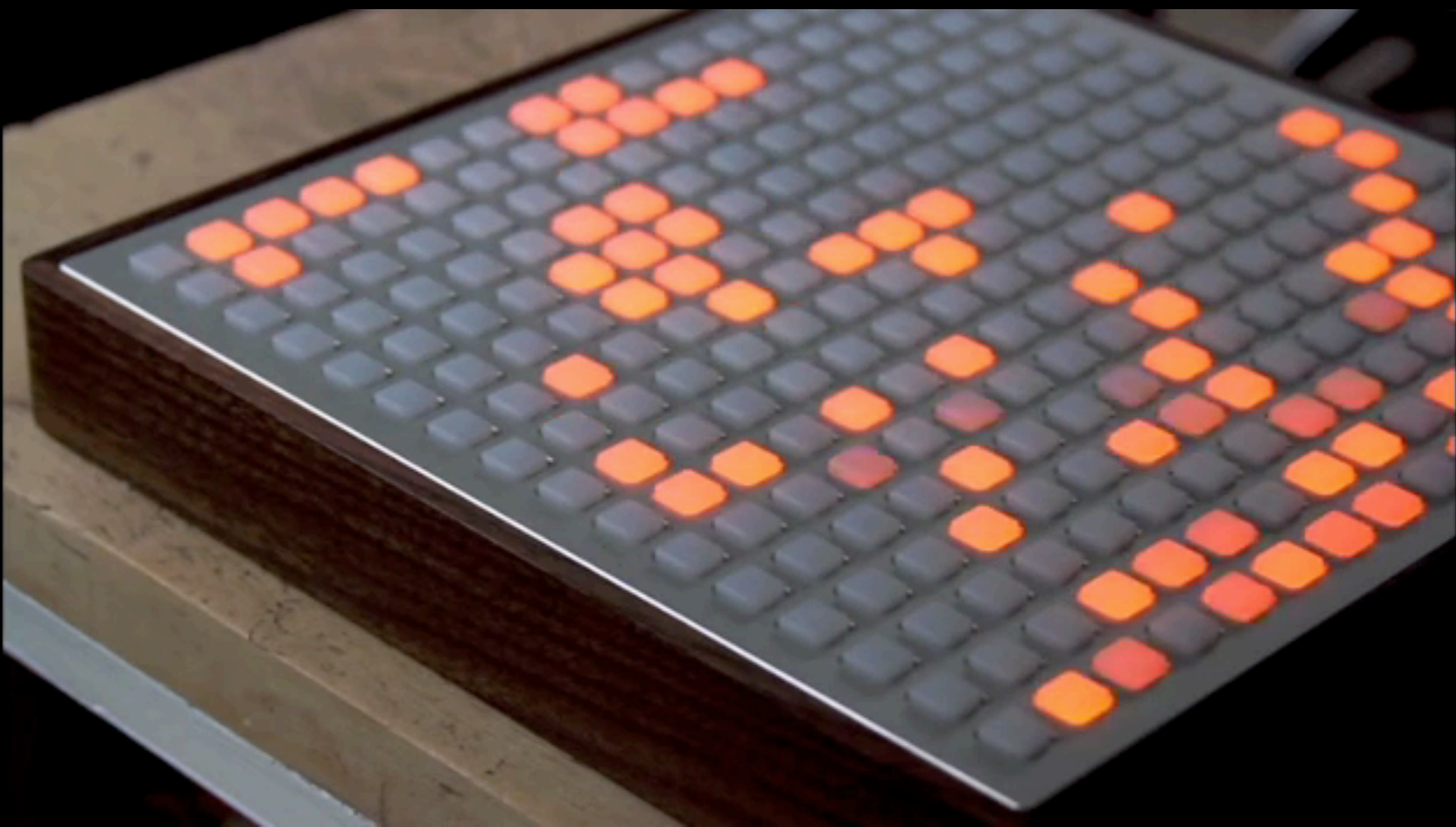




MONOME

Debuted in 2006

They have been quoted, "The wonderful thing about this device is that it doesn't do anything really... It wasn't intended for any specific application. We'll make several applications, and others will make more. We hope to share as many of these as possible."

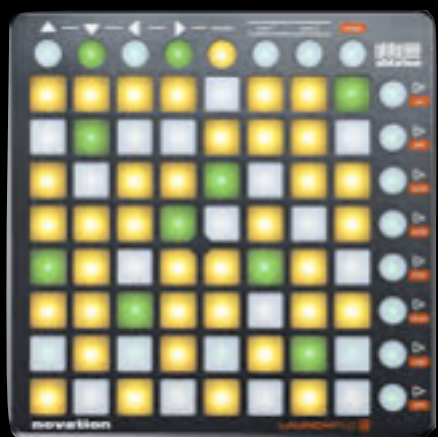


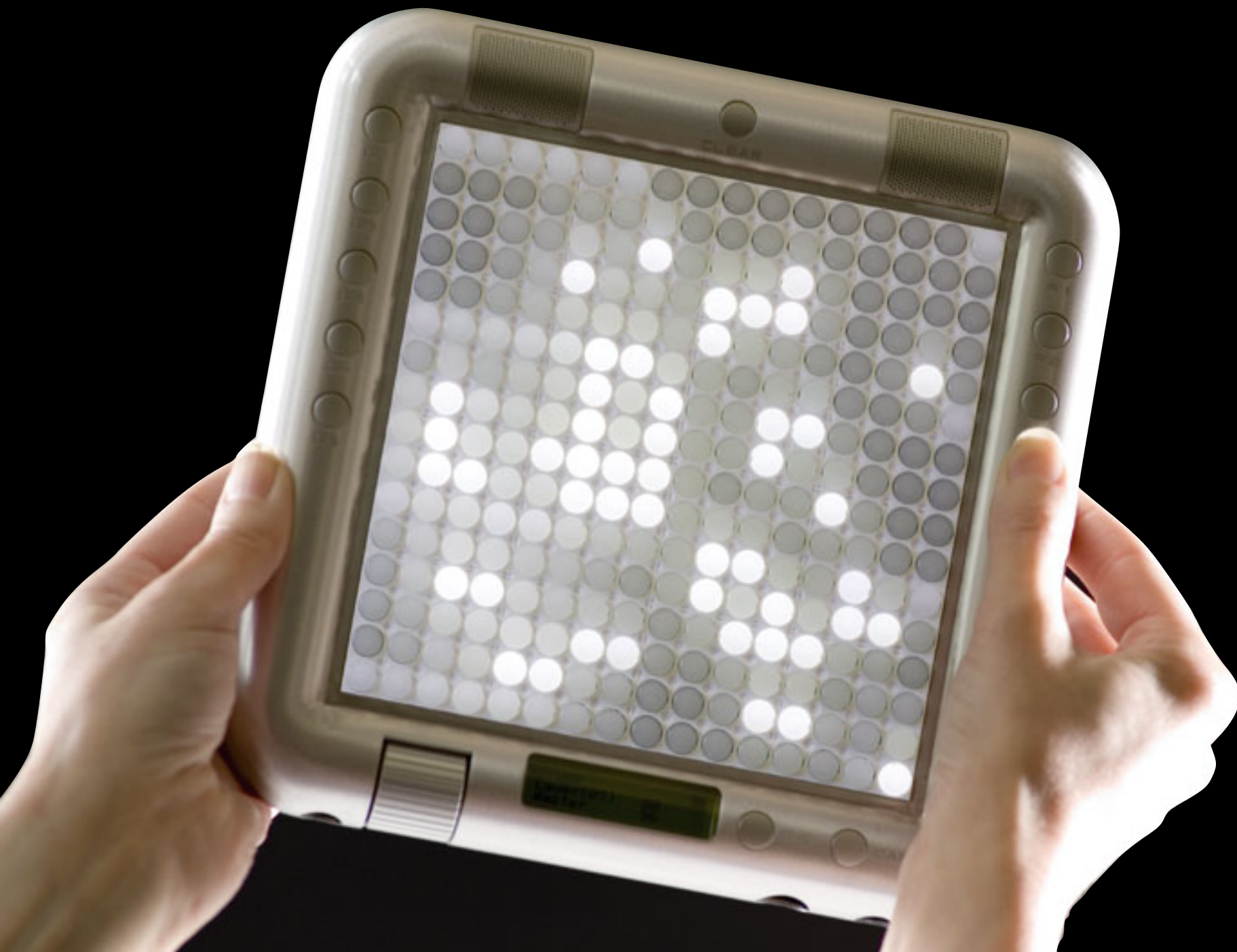


GRID CONTROLLERS

Flexible Mapping

Constraints applied at the control level, but mapping of simple binary signals is where complex interactions can take place





MUSIC + GAMES





+



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