

TROIKATRONIX.COM

Isadora Software

WiFi:

Password:

COLLIDING WORLDS... theatre, meets interdisciplinary artists, meets VJs meets commerce... new media innovation...

Isadora is a graphical programming environment (data-flow programming) that provides interactive control over digital media, with special emphasis on the real-time manipulation of digital video.

www.jamiegriffiths.com/isadoraworkshop/

SCIENCE, ART & DESIGN

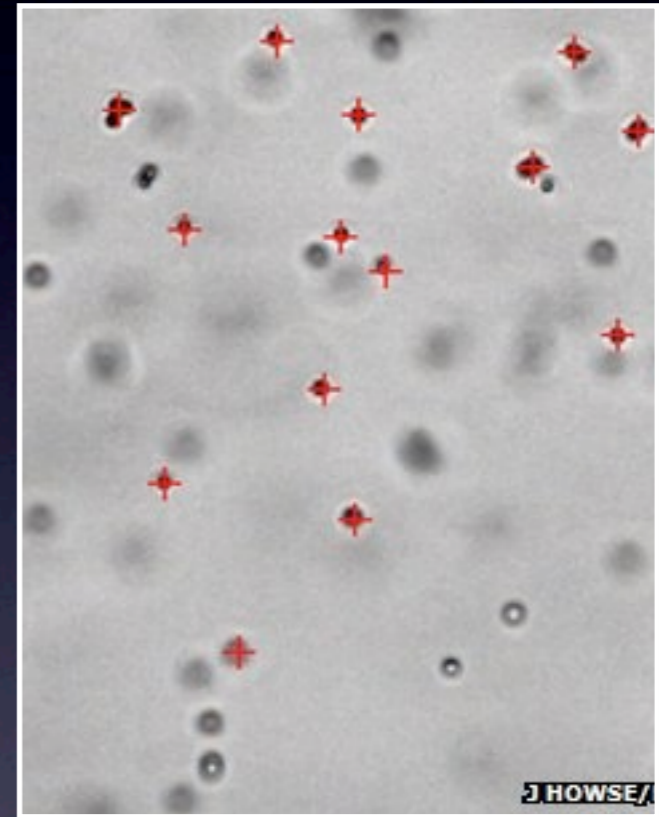
Creative Expressionism? Conceptualism? Formalism?
Exploration? Experimentation? Time-based
Performance?? Repeatability of Installations?
Variability? Collaboration?

**Interdisciplinary New Media Artists are
using scientists, designers and artists...
using** mathematics, physics, chemistry, electronics,
computer science...etc... combined with old and new
artistic practices...

to produce **'Technology/Data Art?'**

Interactive Art & Science

- Mapping sounds to Brownian Motion (the movements of microscopic moving particles)... Is this art or science?
- What is Mapping?
- <http://www.bbc.co.uk/news/science-environment-19647038> (sound link)
- <http://www.bbc.co.uk/news/uk-wales-18882190> the sounds of plants



DATA DRIVEN TECHNOLOGY ART

DATA lies at the heart of the art whether you use it to control digital media or collect it to analyse it for meaning and subsequent artistic expression.

[http://www.guardian.co.uk/science/video/2013/jul/05/
painted-numbers-mathematical-patterns-nature-video?
CMP=twt_gu](http://www.guardian.co.uk/science/video/2013/jul/05/painted-numbers-mathematical-patterns-nature-video?CMP=twt_gu)

[http://imagination.lancs.ac.uk/articles/
Data_Dimension_FutureEverything_2011](http://imagination.lancs.ac.uk/articles/Data_Dimension_FutureEverything_2011)

<http://www.abc.net.au/arts/stories/s3779959.htm>

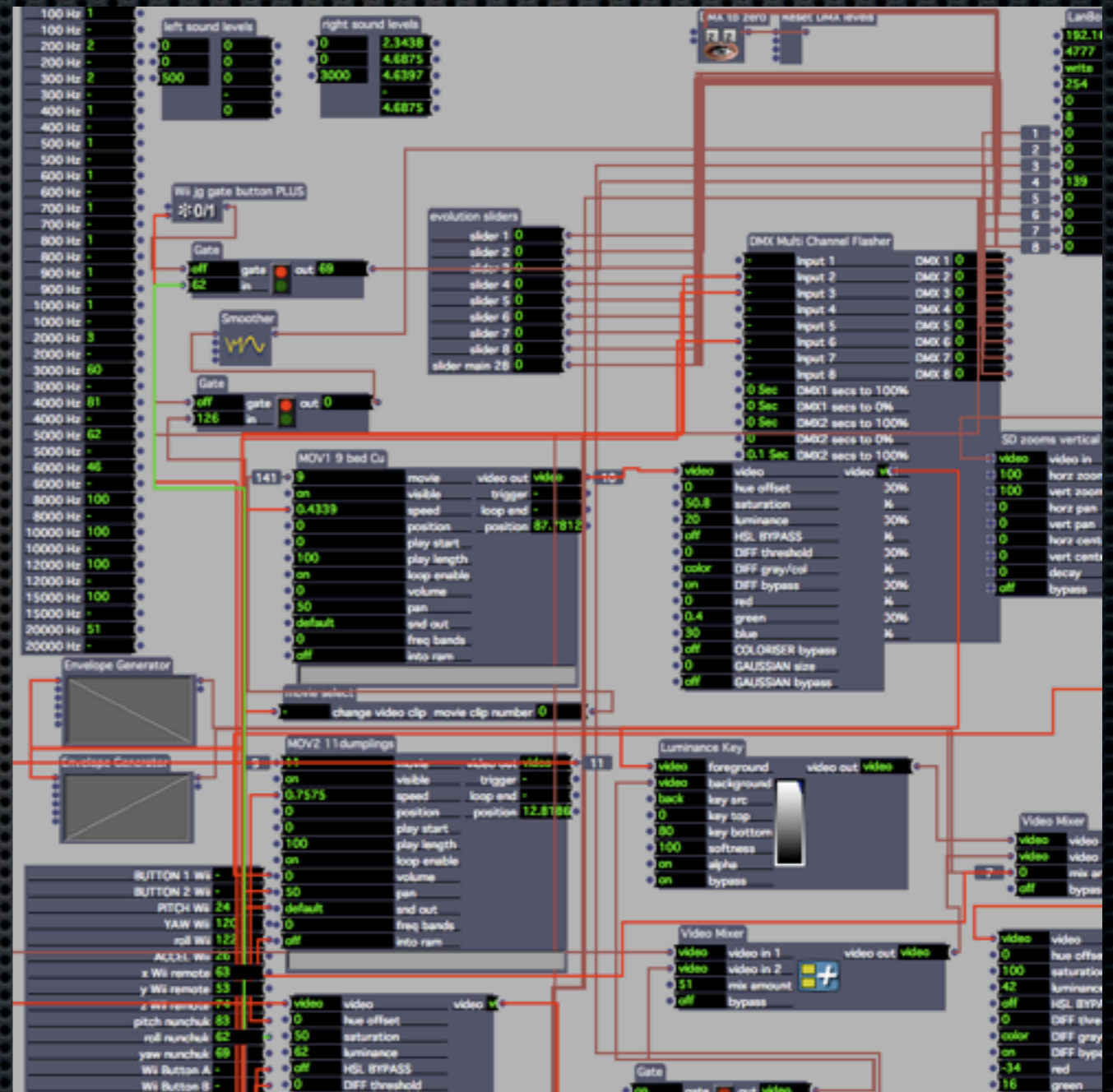
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Mark Coniglio

Creator of Isadora Software



control panel mode



build/edit mode

'When That I Was' CONCEPT VIDEO FOR LIVE DANCE PERFORMANCE

Nigel Charnock (DV8, Helsinki Contemporary Dance)

Noam Gagnon (The Holy Body Tattoo)



“The live moment as the moment of truth” Joel Ryan (IRCAM & STEIM)

Software as an interface between the real world and
the imagined–designed–performed world.

**DIGITAL MEDIA ARTISTS CAN PERFORM SPONTANEITY
BUT ALTER REALITY IN THE PROCESS**

images from 'GRACE': a collaborative creation with Joe Ink and Diana Burgoyne

and from 'IMMANENCE' featuring Tara Cheyenne Friedenber

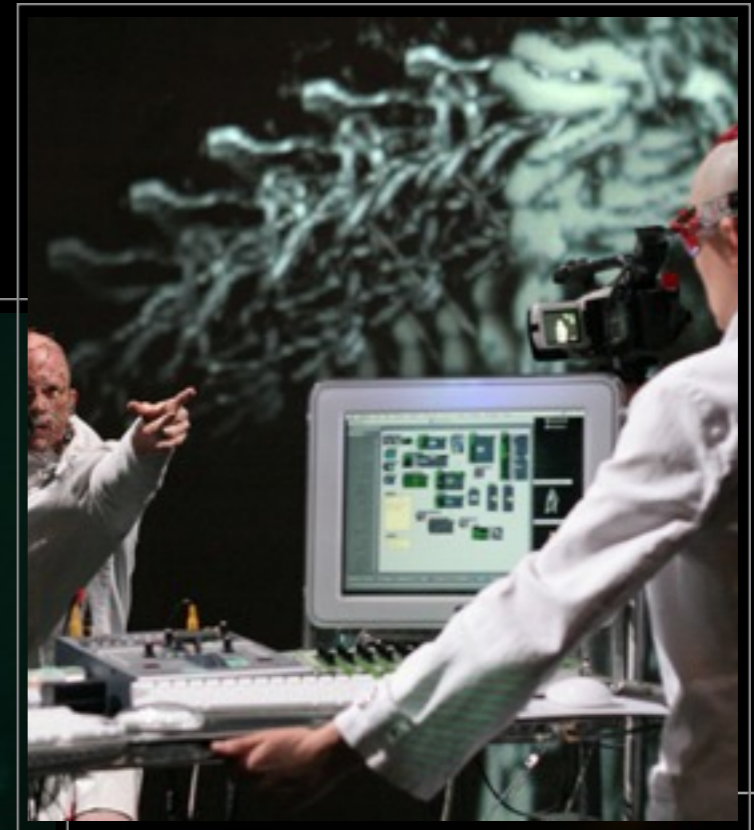
jamie griffiths

visual & new media artist, film-maker, performer

jamie@jamiegriffiths.com

www.jamiegriffiths.com

- **INTERACTION DESIGN**
 - **STAGE & PERFORMANCE ART**
 - **GALLERY INSTALLATIONS**
- **LIVE FILM & VISUAL MUSIC**
 - **MUSIC, IMPROV, ORCHESTRA**
- **RESEARCH & DEVELOPMENT**
 - **INTERACTIVE TECHNOLOGIES**



CONCEPTUAL PHOTOGRAPHY, FILM AND VIDEO

**CONTEMPLATIVE OBSERVATION, DARKROOM INNOVATIONS
BRUSHES, TONERS, MULTI-TONING, BLEACHING, REFRACTION...**

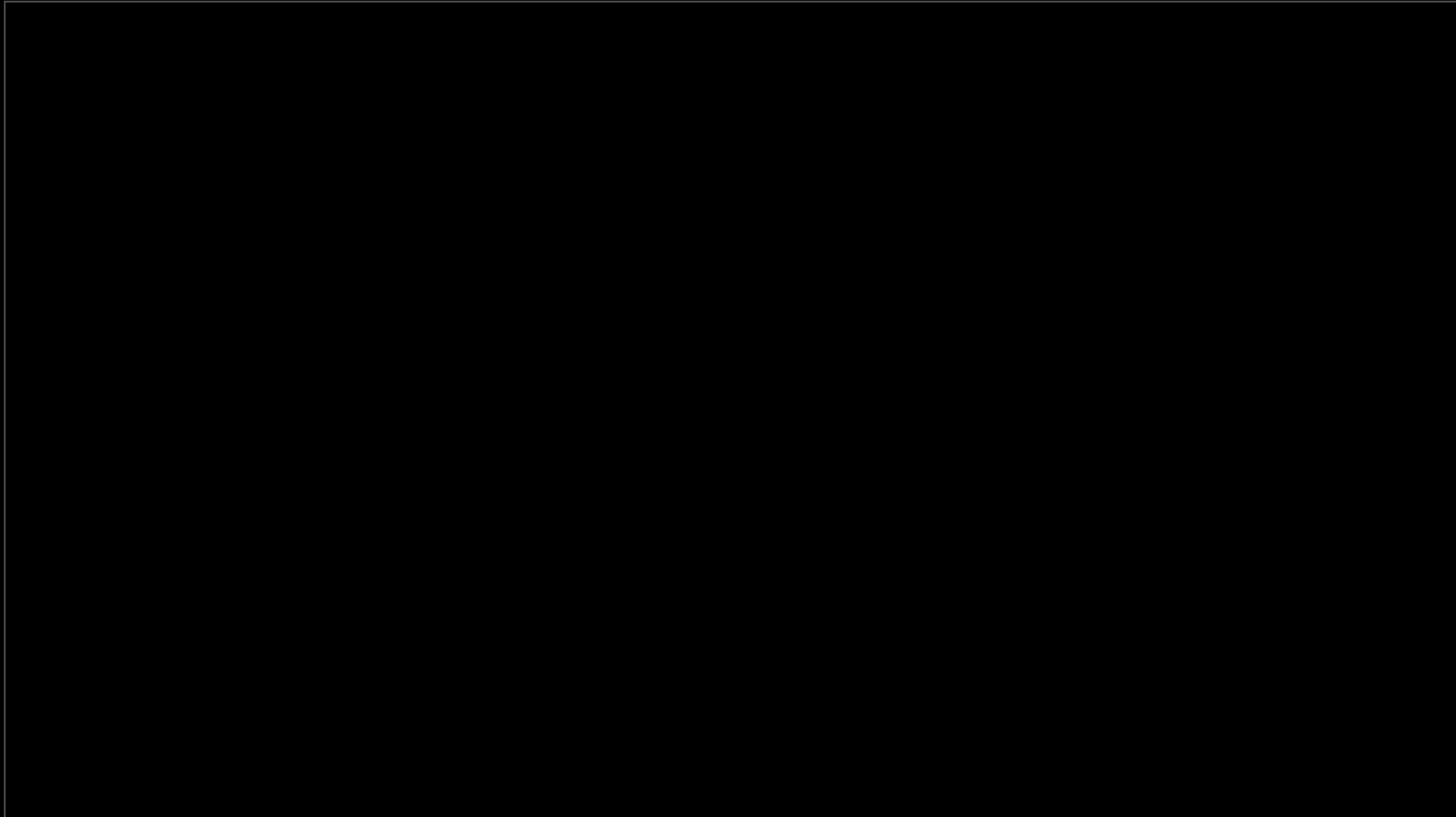


**Analog and Digital image convergence.
Darkroom, Digital Manipulation**

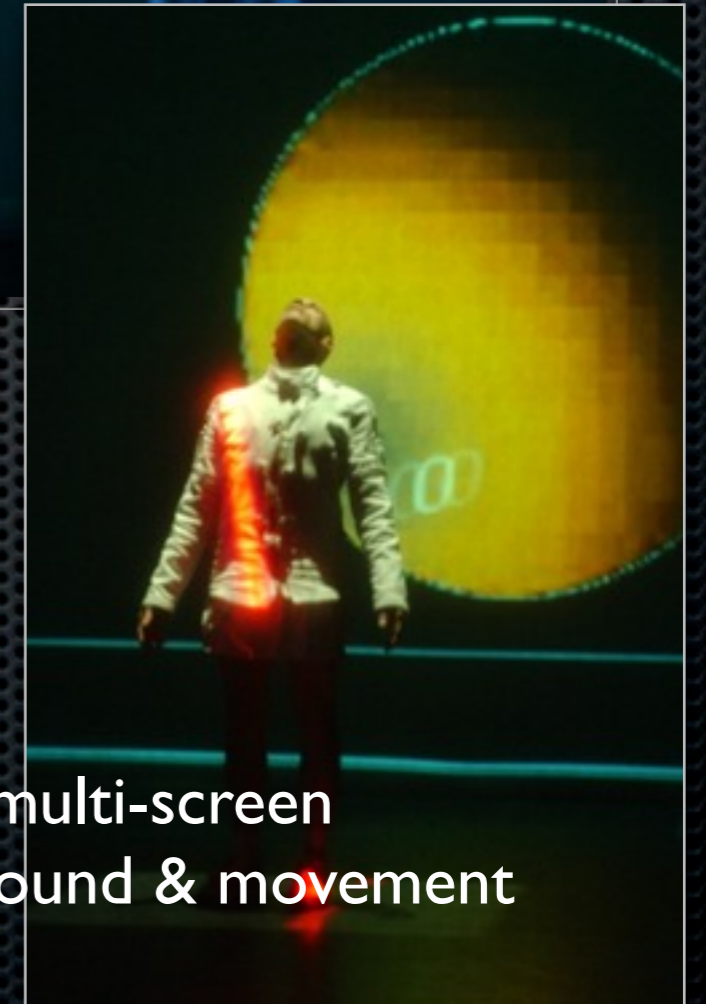
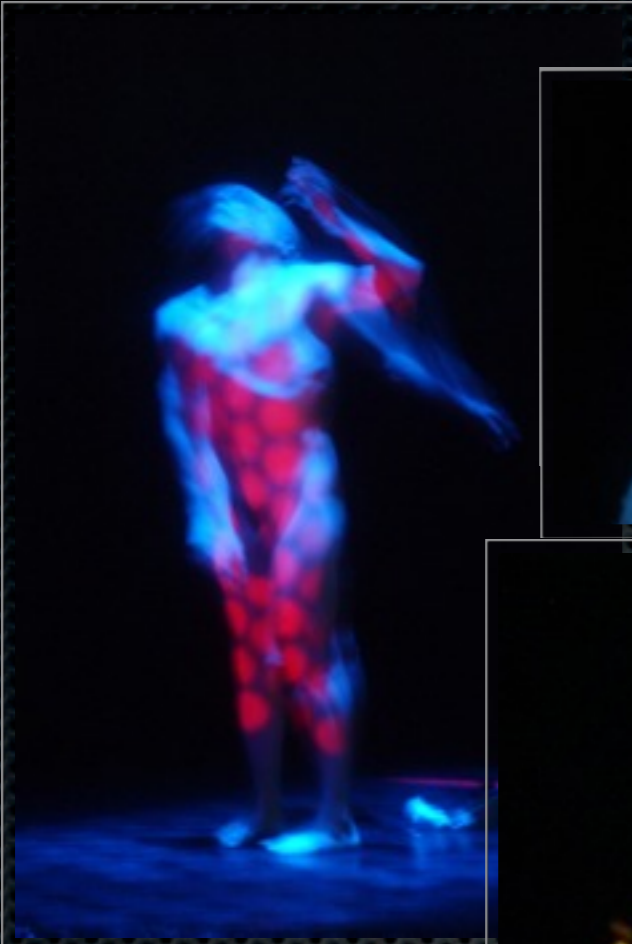
**ABSTRACTED VISUAL DESIGN
Darkroom, Digital Manipulation
Abstract Visual Design Explorations**



PHOTO-THERAPEUTIC ART
*Photo-Therapy Techniques in video
& photographic creative processes.*



images from 'GRACE' with Joe Laughlin/Joe INK



MOVING BODY generates imagery. Audience triggers. Live multi-screen projection performance with interactive visuals, responding to sound & movement

Micro-remote **WIRELESS CAMERA** system designed by jamie griffiths and worn onstage.

<http://www.joeink.ca/past-projects.htm>



INTERDISCIPLINARY IMPROVISATION Kenaxis (Max/Msp) for audio & Isadora for visuals. 50 minute improvisation on a theme. Jamie Griffiths (visuals), Noam gagnon (Dance), Stefan Smulovitz (Viola & Music), Viviane Houle (Vocals)
LIVE CAMERA with foot pedal control in Isadora. Live text. Live generation & processing of imagery & sound.

COMMON

Christ Church Cathedral, Vancouver, 2005

A storytelling piece, with projections and tuvan throat singers of the ***One Voice Harmonic Choir***.

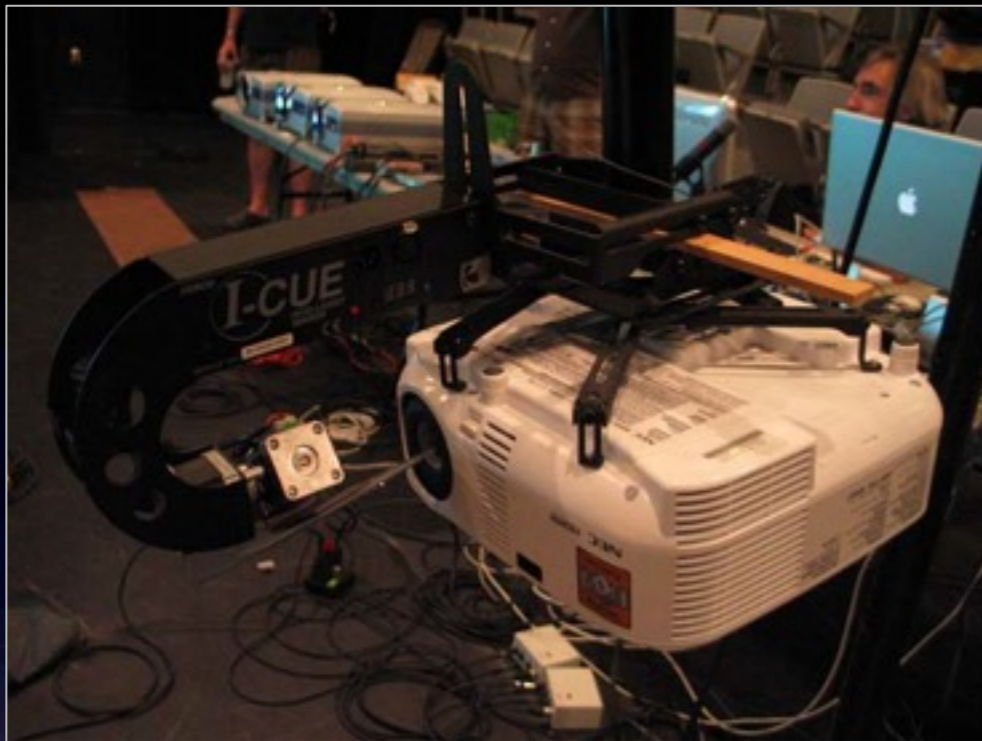
Imagery derived from water around the world was driven by pitch and frequency, as well as controlled by MIDI.

Visitors entering the cathedral triggered soundscape pre-recordings of prayer and the meaning of prayer from 7 different faiths/belief systems. These were also then incorporated into the MIDI performance.

Christian (Catholic, Anglican), Muslim, Jewish, Bahai, Hindu & Atheist



<http://www.youtube.com/primaldivine>



- **INTERACTIVE VIDEO SPOTLIGHT**
Designed by jamie griffiths & Jason Dubois

- Controlled with Isadora software and a Wii Controller, via a **LANBOX** and standard theatre equipment (iCue mirror)

- Video image can be moved anywhere in a 280 degree angle from the hanging position.



- **VIDEO FOLLOW-SPOT** Can be programmed to automatically follow a person or to respond to sound, music or motion.

- **AUTOMATIC KEYSTONE** adjustments calculated on-the-fly, designed by Rob Scharein

[VIDEMOTE demo on YouTube](#)

<http://www.youtube.com/primaldivine.com>

1984 (George Orwell)

- **The Virtual Stage** theatre company specialising in new technology in performance.



“Invasive technological devices, such as the all-seeing “telescreen” that Big Brother installs in every home, are central to Orwell’s cautionary tale. Our team investigated how to give the projection a sense of motion, allowing it to stalk, lurk, intimidate and oppress the characters of Winston Smith and Julia as they attempt to hide their forbidden love affair from the Thought Police of Oceania using Visual Media Designer Jamie Griffiths’ new Vid-Emote, an invention of hers that operates essentially like a moving and computer-programmable video spotlight (much like a “moving light” but with a video image). Ms. Griffiths was able to fly her image around, hitting multitudinous “marks”, and use the video projector as scenography and as a lighting instrument in rapid succession on multiple surfaces.” Andy Thompson

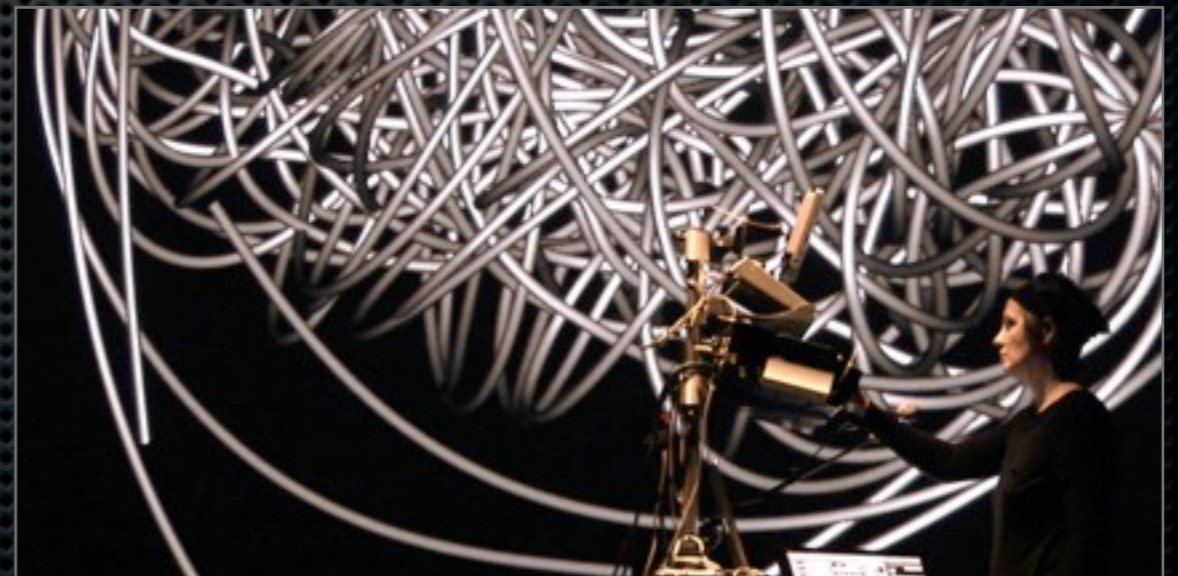
3D Knots & 3D Projections

Collaborations with Rob Scharein using custom software into Isadora via Syphon.

MYSTIQ - Anaglyph stereoscopic video with text & photographs

WATER TO BONE 3 knots sung into existence by vocalist Viviane Houle

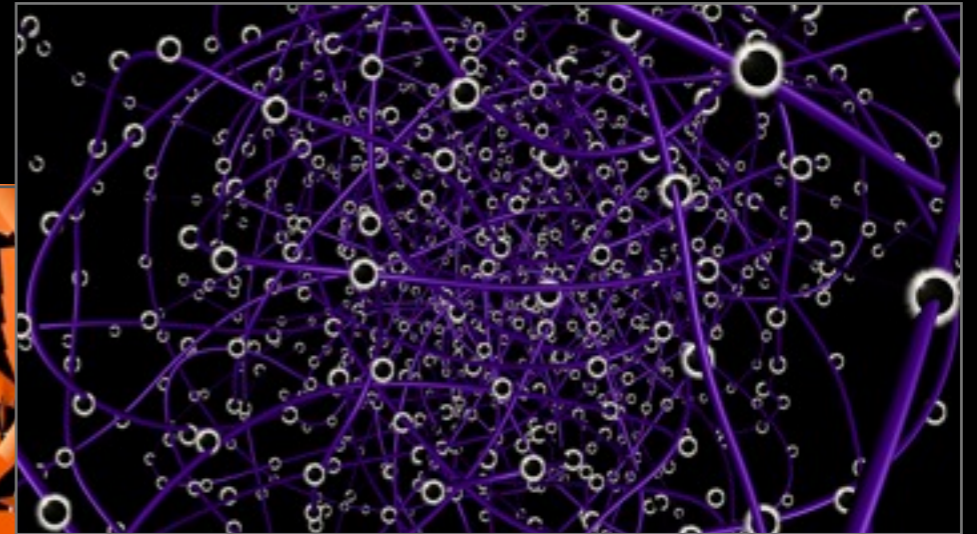
THE ROAD FORWARD Live performance of First Nations visual art and film, for aboriginal vocables concert by First Nations Director Marie Clements using Circular Polarization.



MystiQ 3D video projection installation

Words from 800 year old Sufi poems are used in conjunction with interpretive photographs and complex mathematical knots to create a 3D tool for meditation and live performance.

- www.knotplot.com by Rob Scharein



WAVE & SPARK

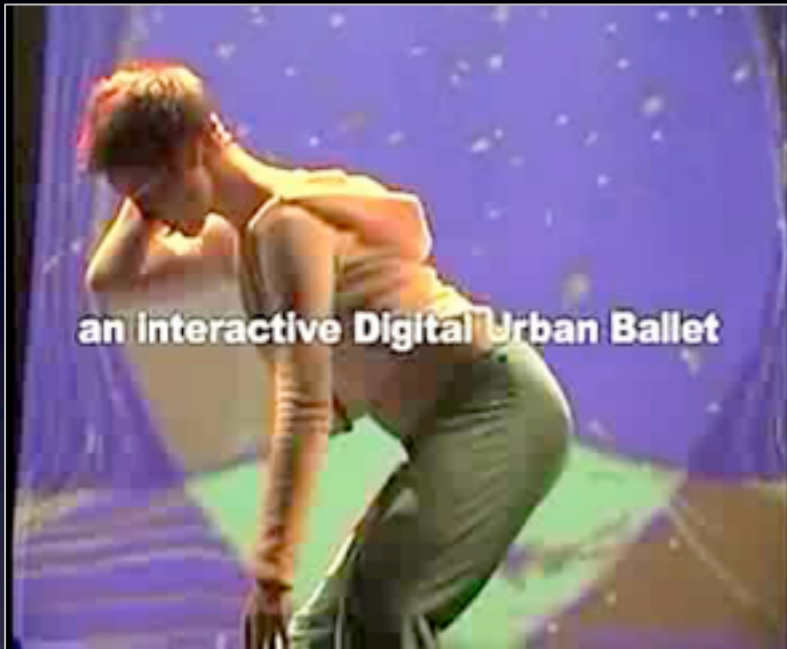
- ✦ interactive live performance for **music, water-derived imagery & 3D sacred geometry**
- ✦ Lighting driven by **flute, voice & synth-guitar**
- ✦ motion control of **video-spotlight** by the action of bowls of water ripples controlled by the performers onstage
- ✦ **3D linear polarised video projection** circular rear screen
- ✦ **Wii controllers** passed among the audience allowed them to alter with the images.



iDUB jamie griffiths & robb lovell

interactive digital urban ballet

with mmHoP, Choreographer Martha Carter



- Multi-screen **INTERACTIVE VISUALS** generated and affected by dancers motions, and live music triggers. Multi-computer control system. **CUSTOM SOFTWARE** designs.
- **MULTI-SCREEN PROJECTIONS.** Community involvement of dancers, live audience participation.

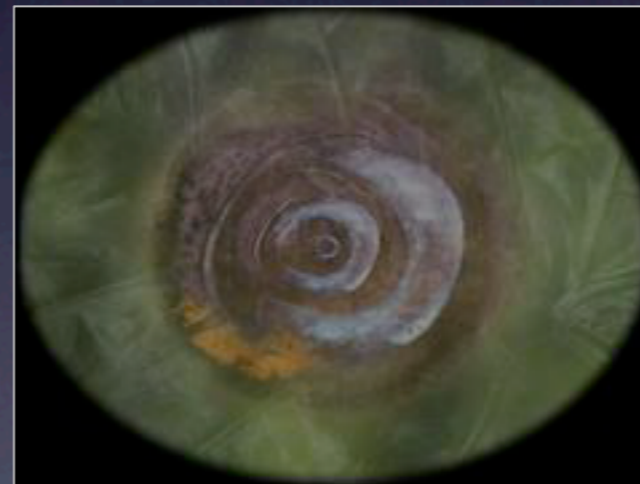


Click this link to [iDUB video on YouTube](#)

EARTH = home

Official arts and Culture festival of the
United Nations World Urban Forum
Vancouver 16-25 June 2006

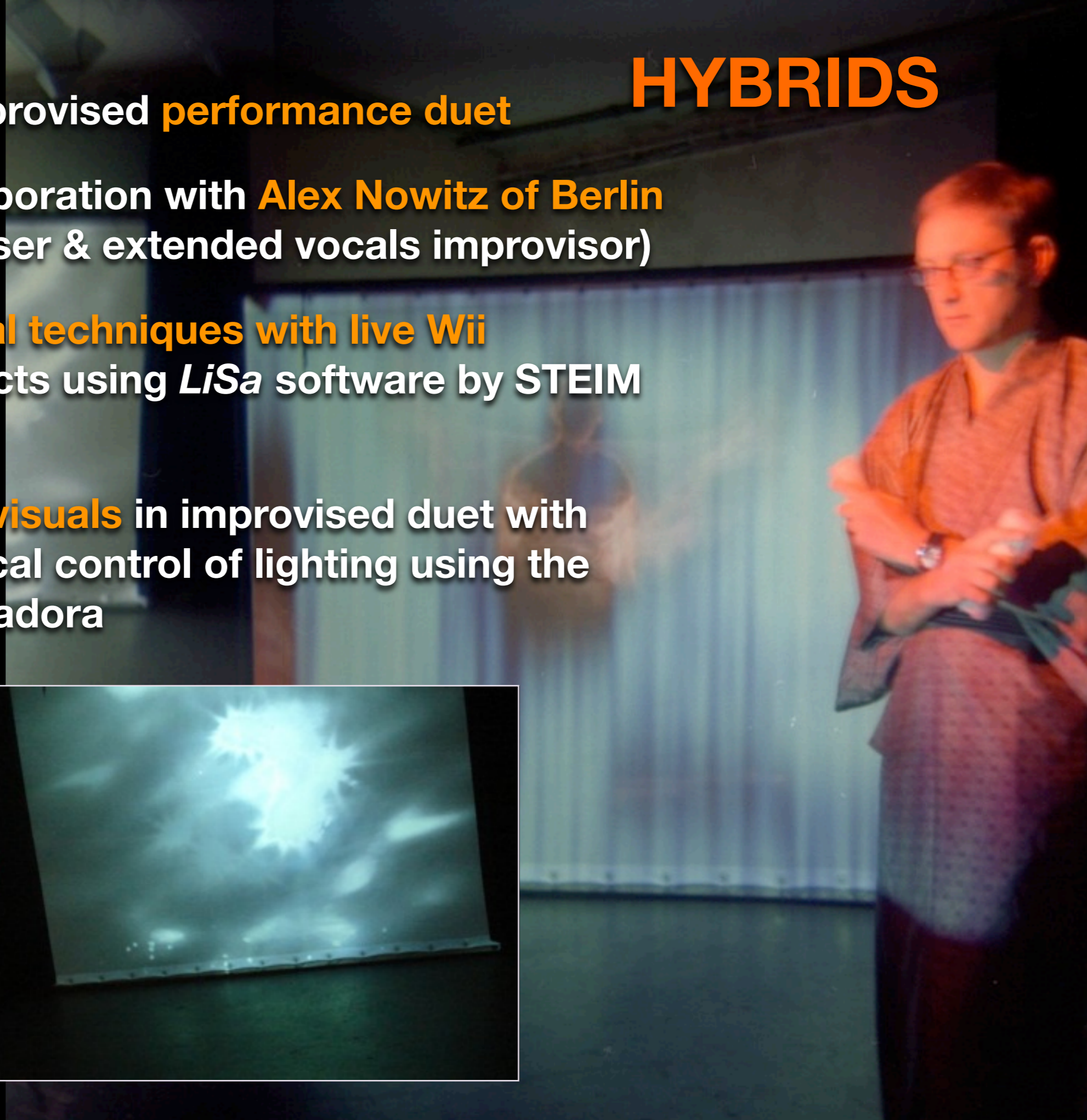
- **LARGE SCALE MULTIPLE PROJECTION DESIGN** (griffiths)
- **MEDIA CONTENT CREATION** (griffiths, Samper)
- **SET DESIGN** (Samper)
- 10 performances, 9 dancers, 3 custom oval screens, large circular performance tent ('Shabono' design by Samper)
- National Arts Funders, Commercial sponsors, **CO-PRODUCED BY THE UNITED NATIONS.**



Click this link to watch [EARTH video on YouTube](#)

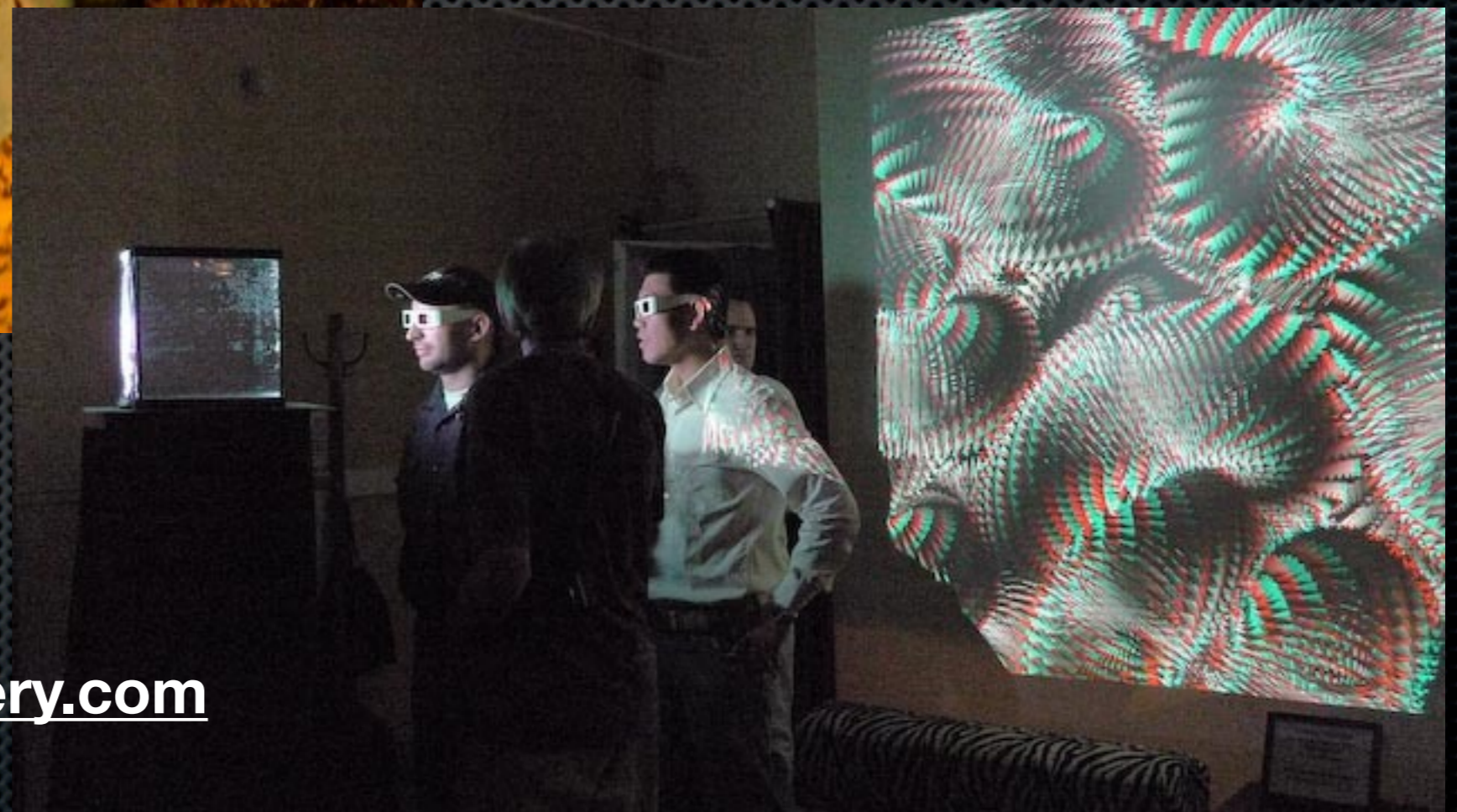
HYBRIDS

- ✦ interactive improvised **performance duet**
- ✦ Creation collaboration with **Alex Nowitz of Berlin** (opera composer & extended vocals improviser)
- ✦ **Extended vocal techniques with live Wii controller** effects using *LiSa* software by STEIM (Amsterdam)
- ✦ **Wii control of visuals** in improvised duet with vocals and vocal control of lighting using the Lanbox and Isadora



MystiQ 3D video projection creation & installation

Words from 800 year old Sufi poems are used in conjunction with interpretive photographs and complex mathematical knots to create a 3D tool for meditation and live performance.



● www.vivariumgallery.com



Museum of Anthropology

Vancouver BC

MystiQ 3D video projection installation

Bill Reid Atrium Interactive Video, Sound & Lighting

Visitors to the museum were greeted in Sept 2009 with interactive art displays that responded to their movements and hand gestures. The rotunda lighting responded to sound. Dancers with the mmHoP dance troupe energised the corridors and hallways of the museum.

DIGITAL VIDEO ILLUMINATION DVI System

A RESEARCH PROJECT

A SSHRC funded 3 year research project, working with
Prof. Robert Gardiner at UBC.

Research and Development of a control system of multiple video
projections as lighting instruments for live performance in a real world
and virtual 3D environments.



<http://faculty.arts.ubc.ca/rgardiner/rgsshrc/index.htm>

introductions

practical skills... camera, music, imagery, tech?
level of experience & computer skills
creative goals

the basics

Isadora software is used to control media (video files, sound files, live video input (cameras), live audio input (microphones) , midi controllers (eg keyboards) , DMX signals (theatre lighting)... other softwares

A manipulated video image is output to a second computer monitor or to screens or installation environment by video projector/s.

Manipulated sound can be output to an external audio environment such as a theatre PA (multi-speaker) system.

Interdisciplinary tool for theatre, opera, dance, music, performance art, Installations, experimental films, abstract cinema, research in performance...

why isadora?

Simpler entry point into interactive programming.

Graphical programming software with an easier learning curve than most of the competitors, without losing complexity.

More flexible than traditional show control software (such as QLab) for live performance.

Faster build time, due to the supplied building blocks within Isadora of programming called 'actors' that contain prebuilt processing algorithms.

Quicker build time to creativity. Less tool-making is needed in the initial stages.

related softwares

Max/Msp & Jitter & PureData (P.D.)

www.cycling74.com

Plugins

[FreeFrame](#) free video processing effects

[QuartzComposer](#) (Mac)

[Syphon](#) (Mac)

Language based programming softwares

[Processing](#)

[Super Collider](#)

many Third Party softwares

[OSCulator](#), MadMapper, Visio

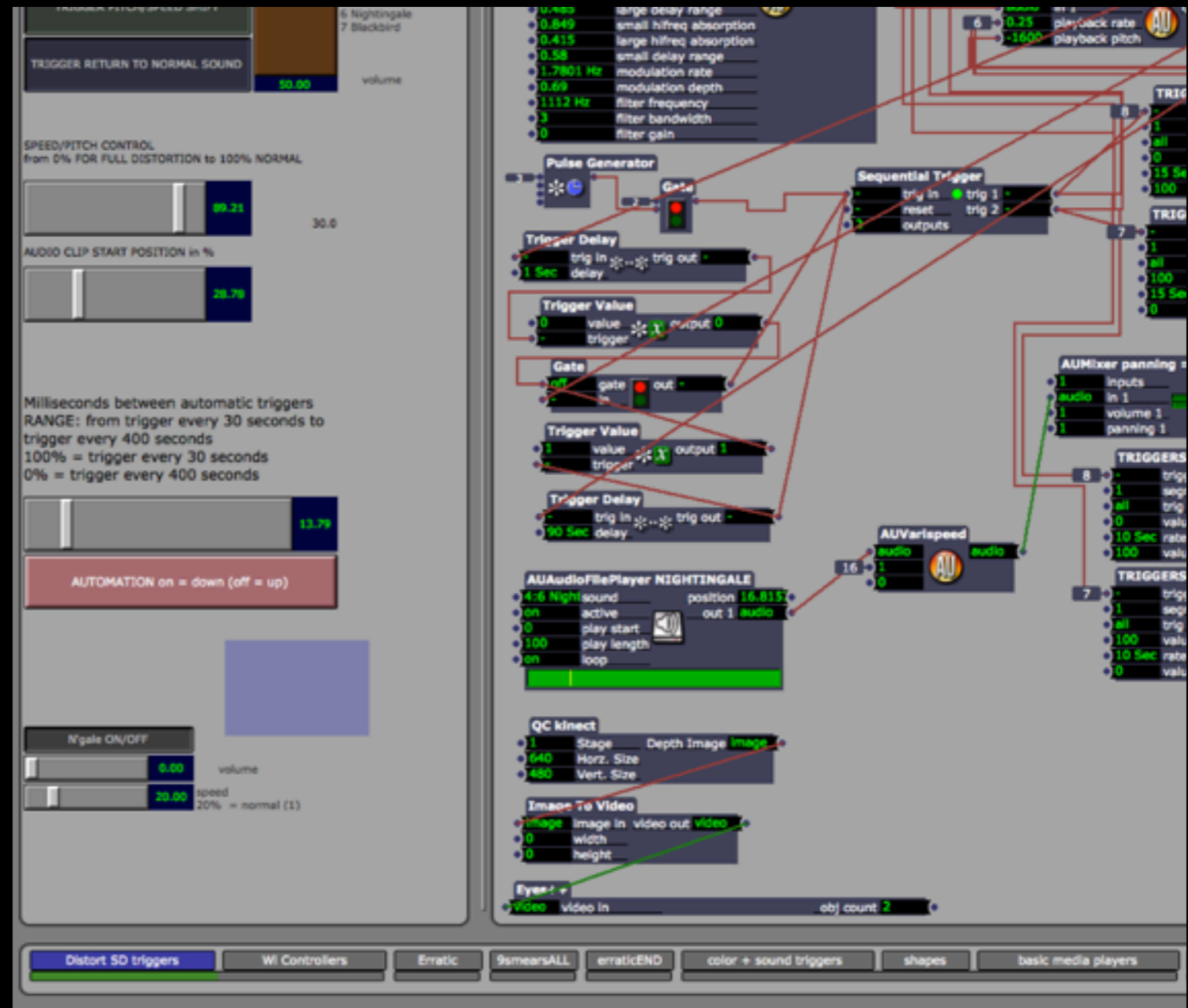
Resolume, Arkaos (VJ softwares)

PLUG INS such as Quartz Composer and FreeFrame plugins allow users to create custom actors of their own and to share them with other users.



SCENE-BASED programming, allows for linear or non-linear use.

Easy to use **CONTROL PANELS** for theatre/gallery staff or general public.



what else can 'izzy' do?

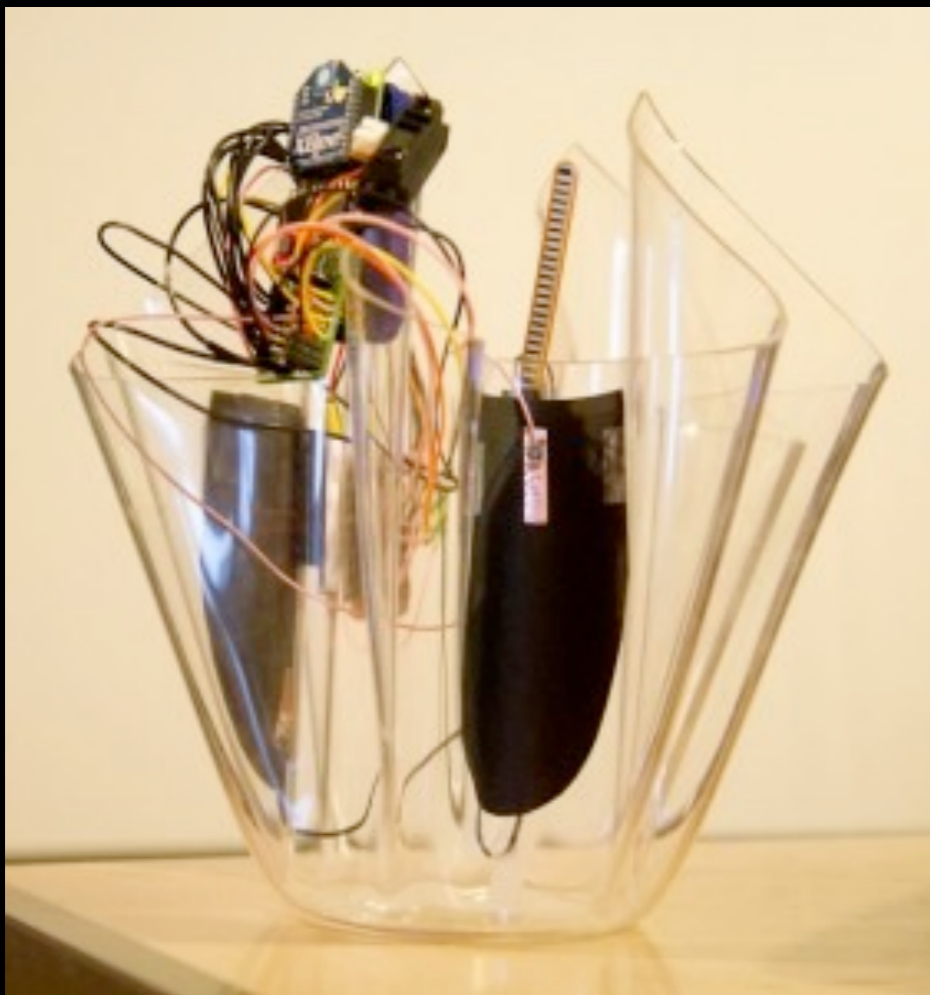
Virtual MIDI in/out - allows Isadora to communicate with other MIDI enabled software eg Ableton Live 6, Max/Msp etc

MIDI in/out - through MIDI hardware, such as synths or MIDI controllers, MIDI keyboards.

Isadora can talk and listen to other software via **OSC (Open Sound Control)** via UDP (User Datagram Protocol).

Syphon shared video streams - Isadora is syphon enabled, so it can share a video stream with other softwares, such as MadMapper.

Isadora can talk and listen to other software via **OSC (Open Sound Control)** via UDP (User Datagram Protocol).



YUV processing (each pixel occupies half the memory of RGB, and is native for PhotoJpeg and DV formats). Hence much faster.

CONNECTIVITY Simple broadcasting of data between networked computers.

Syphon shared video streams - Isadora is syphon enabled, so it can share a video stream with other softwares, such as MadMapper.

Capture video to Disk - record realtime video inputs from cameras. Auto-loads to the media bin for use as a movie file, or held in a buffer for instant recall.

External Video output can be recorded to Quicktime movies or to a camera via a video output card.

Serial Data Send and receive eg Matrix actors for DMX

Control theatre lights using DMX signal data, directly from Isadora instead of a lighting board, via attached hardware such as the Lanbox, Enttec or DMX King.



Motion tracking - Built in modules using the EYES and EYES++ actors, for tracking motion

Sound Monitoring Built in sound triggers, using the Frequency Watcher and Sound Level Watcher.

CORE VIDEO AND AUDIO?

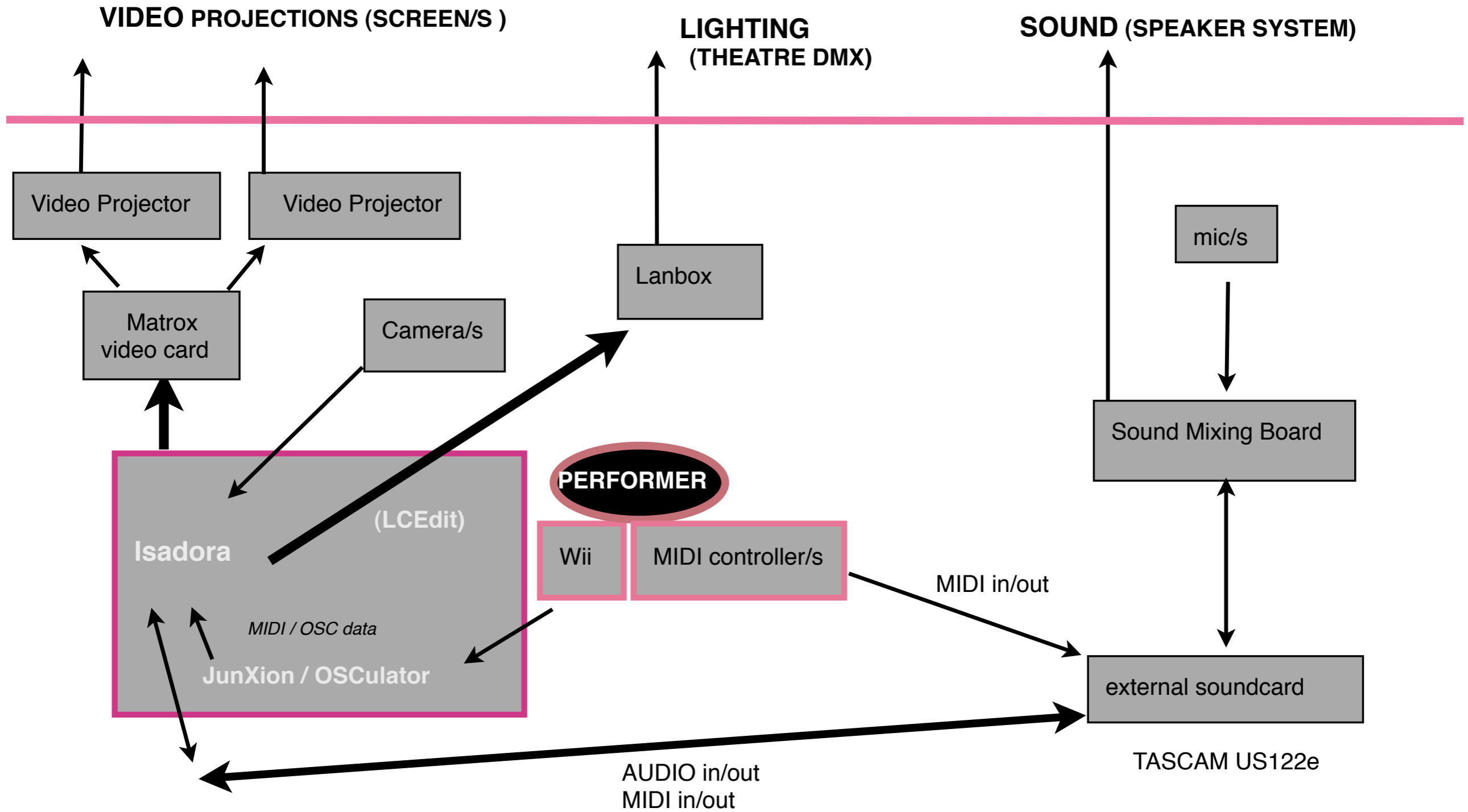
Multi-Channel Sound Output using Apple's Core Audio. (QKT Pro files can be made with multiple channels of audio).

“Core Video is the video processing model used by QuickTime 7 on Mac OS X to interface with the rendering and compositing layers in its graphics model. It delivers the images from QuickTime or other video source to the rest of the Quartz technologies in Mac OS X.[1]

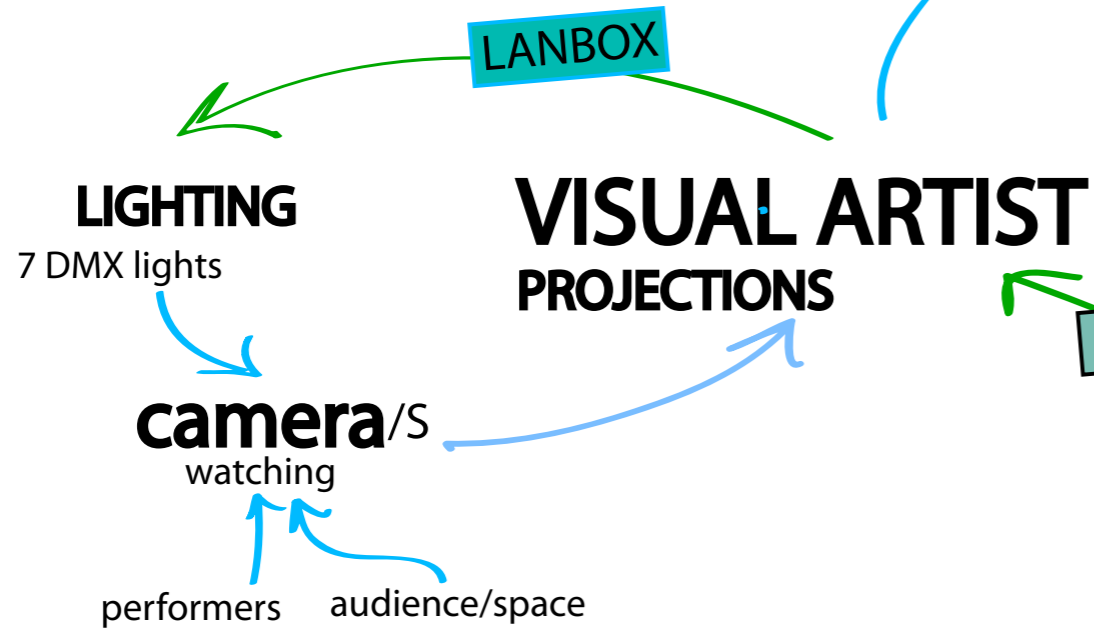
Apple's Core Audio documentation states that "in creating this new architecture on Mac OS X, Apple's objective in the audio space has been twofold. The primary goal is to deliver a high-quality, superior audio experience for Macintosh users. The second objective reflects a shift in emphasis from developers having to establish their own audio and MIDI protocols in their applications to Apple moving ahead to assume responsibility for these services on the Macintosh platform."

• **Setting up equipment** (hardware)

Interactive SOLO tech set up - jamie griffths



VISUALS & LIGHTING CREATED by JAMIE GRIFFITHS
Isadora software, Wii, MIDI, Lanbox, XLR sound inputs x2
 with additional processing of imagery affected by
 input data from sound analysis (listening) to the space
 input data from video tracking (watching) the space & lighting
 input data from Wii controllers of visual artist (physicality of artist)
 input data from Wii controllers of composer (physicality of artist)



ETHERNET

data from isadora can be sent back to alex (music) via ethernet
 data from Alex's Wii can be sent to Isadora (visuals) via ethernet

arrows show flow of information between the artistic mediums

COMPOSER
 MUSIC

MUSIC CREATED by ALEX NOWITZ
Lisa software, Wii, music software, voice
 input data from Wii hand controllers of composer
 input data from video tracking ('watching') the space
 input data from Wii hand controllers of visual artist

XLR

LANBOX

VISUAL ARTIST
 PROJECTIONS

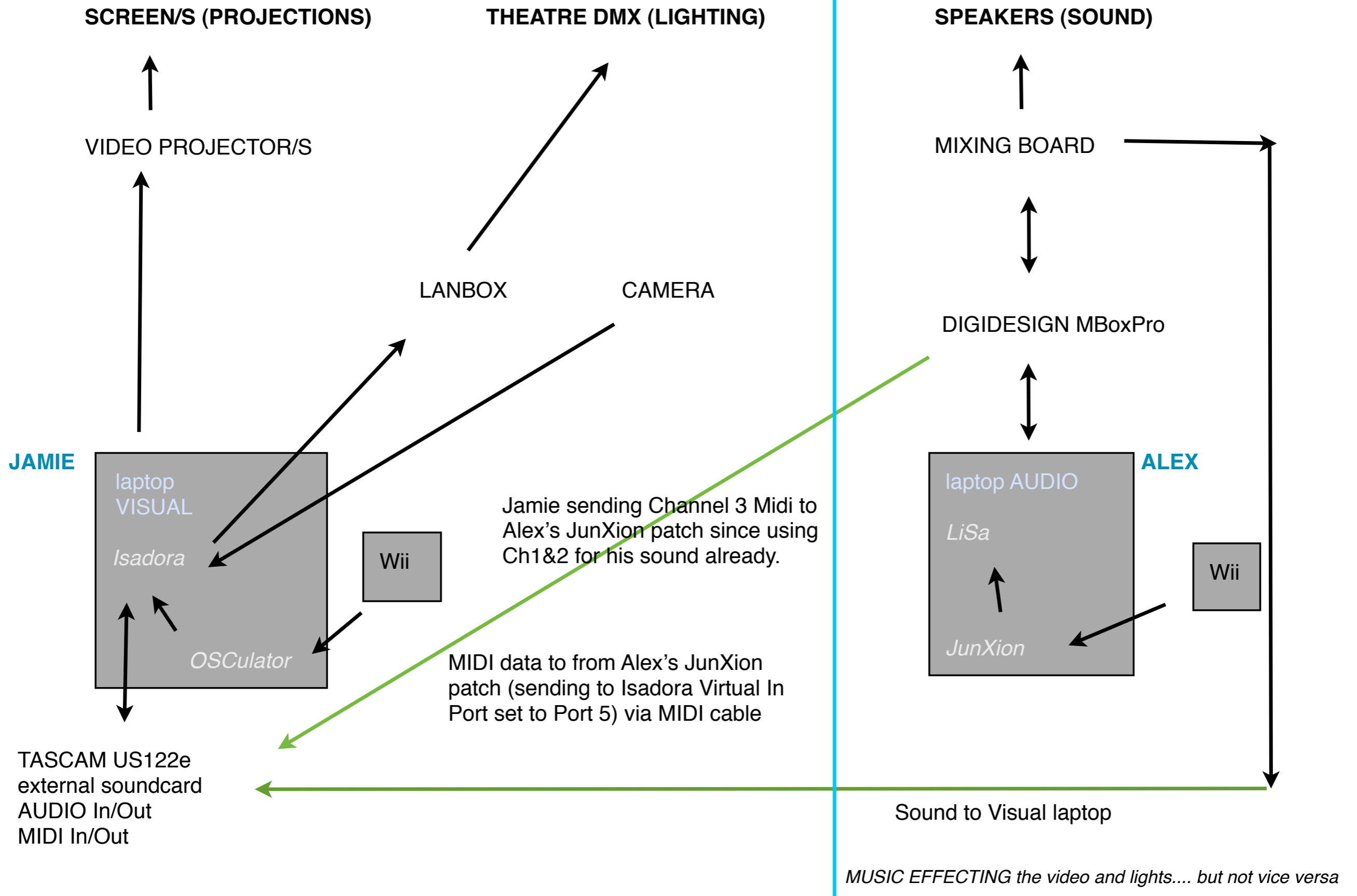
LIGHTING

7 DMX lights

camera/S
 watching

performers audience/space

Interactive game-plan for Project 'Hybrids' with Berlin composer Alex Nowitz



camera tracking... needs a digital camera feed

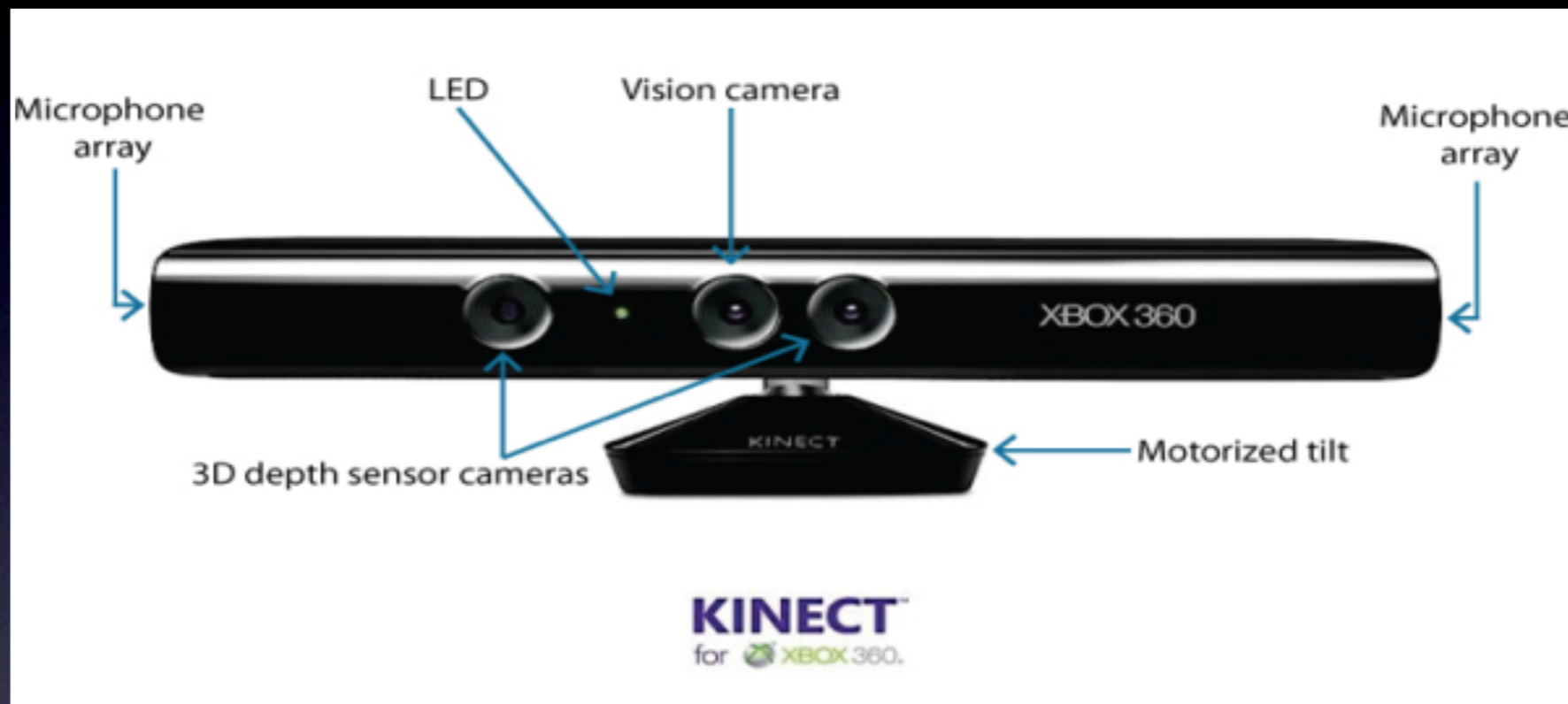


Canopus (Grass Valley)

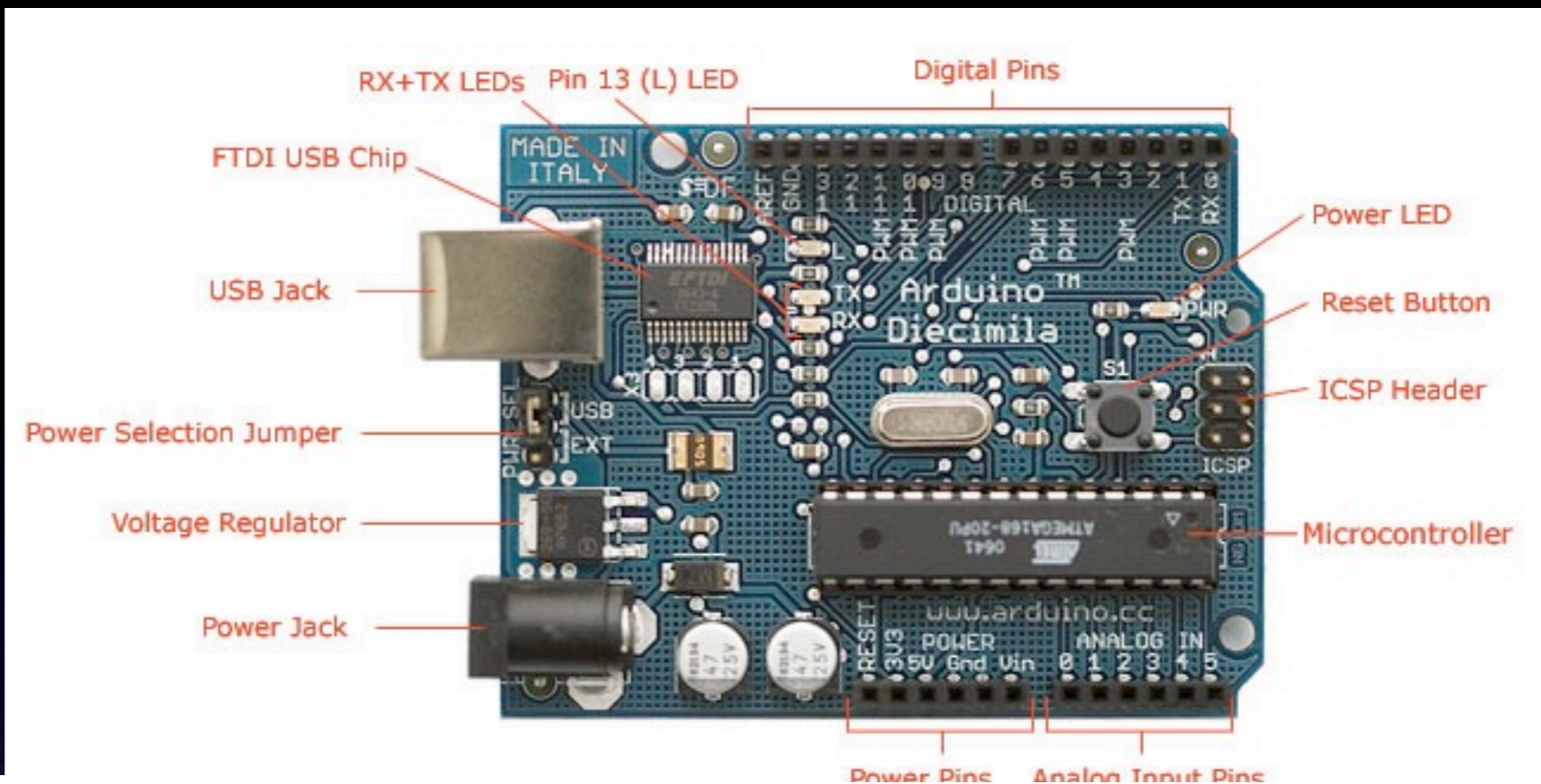


BlackMagic

kinect: infra red, stereoscopic camera



arduino

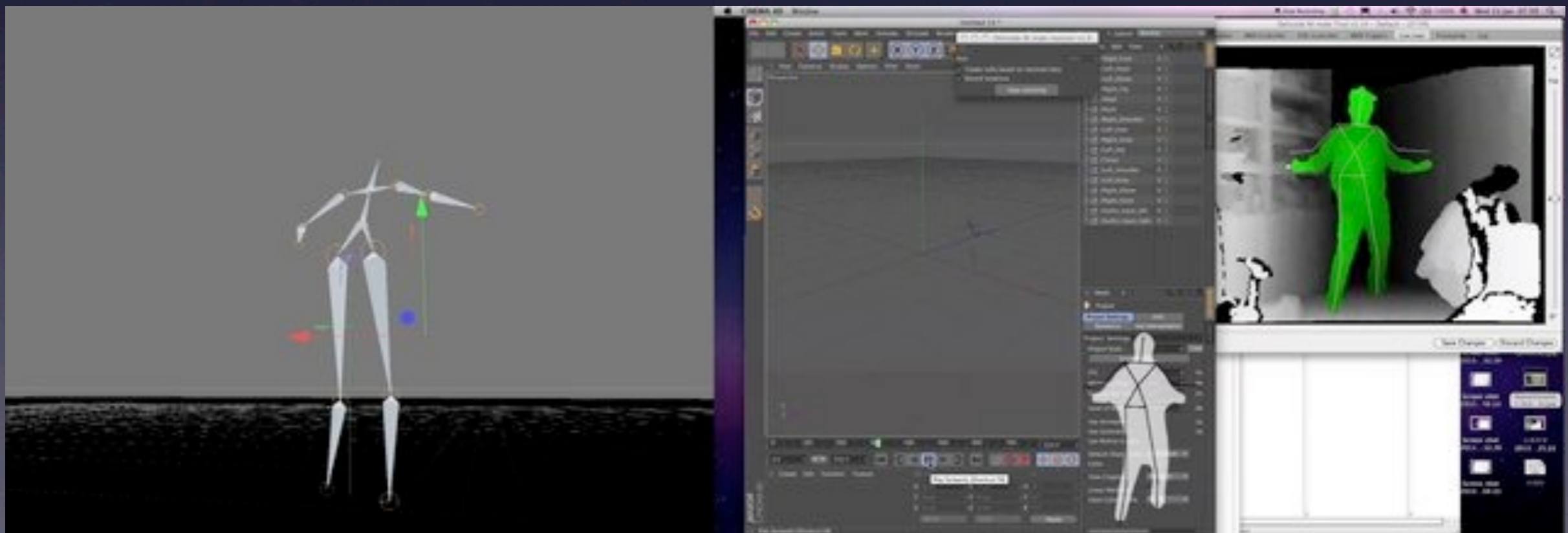


<http://iainmccurdy.org/sensorsworkshop/index.html>

NiMATE skeleton tracking software

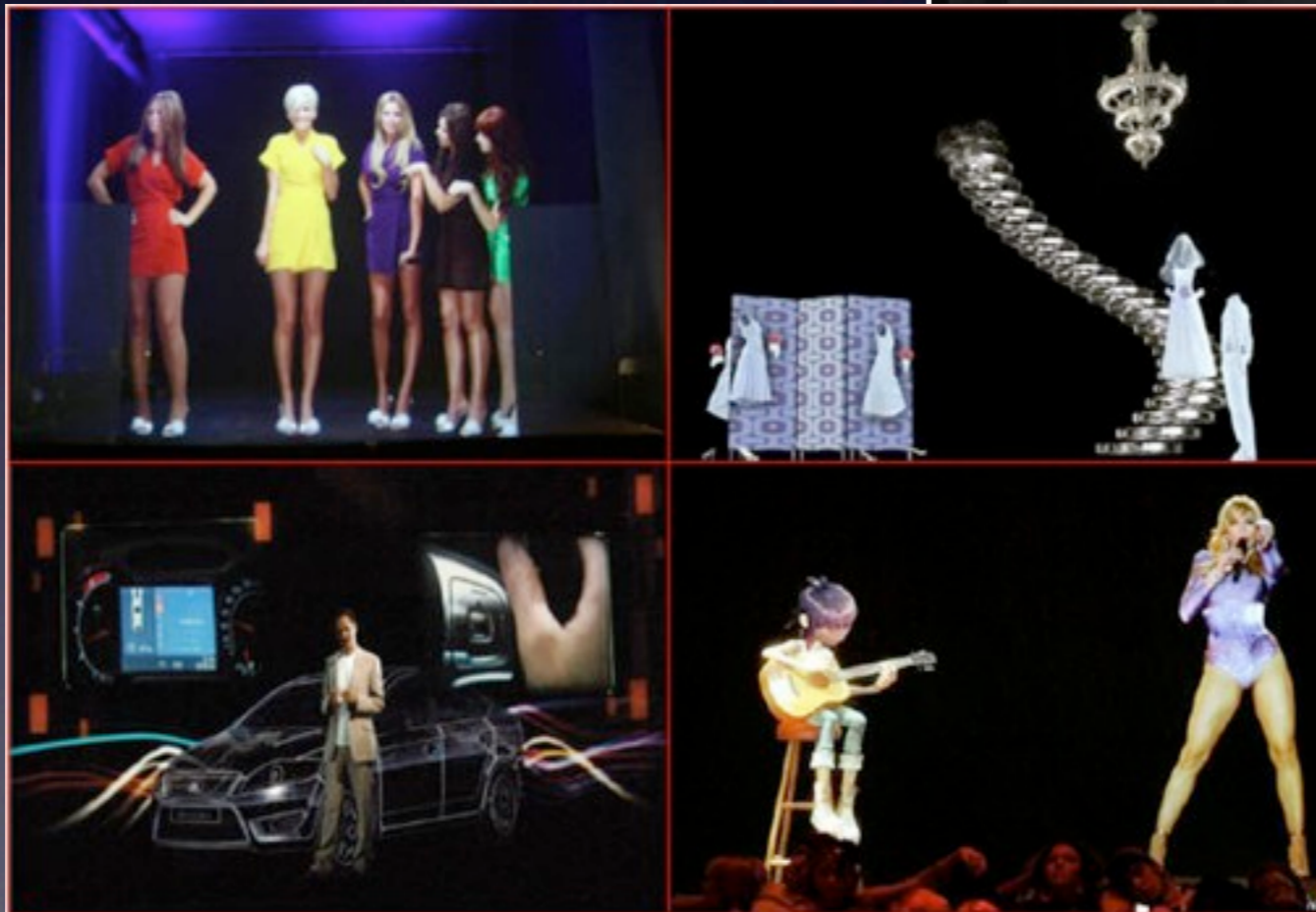
Skeleton points are sent via OSC messages into Isadora.

The tracked depth map image can be sent to isadora using the syphon capabilities of both softwares.



hi tech peppers ghost

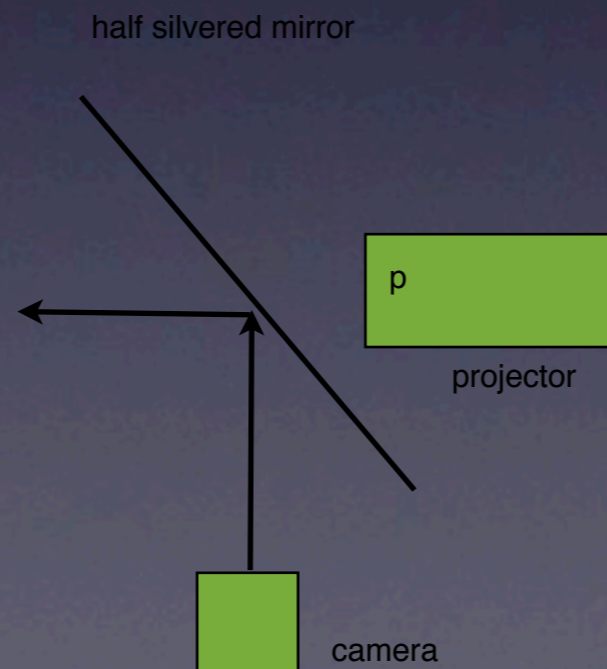
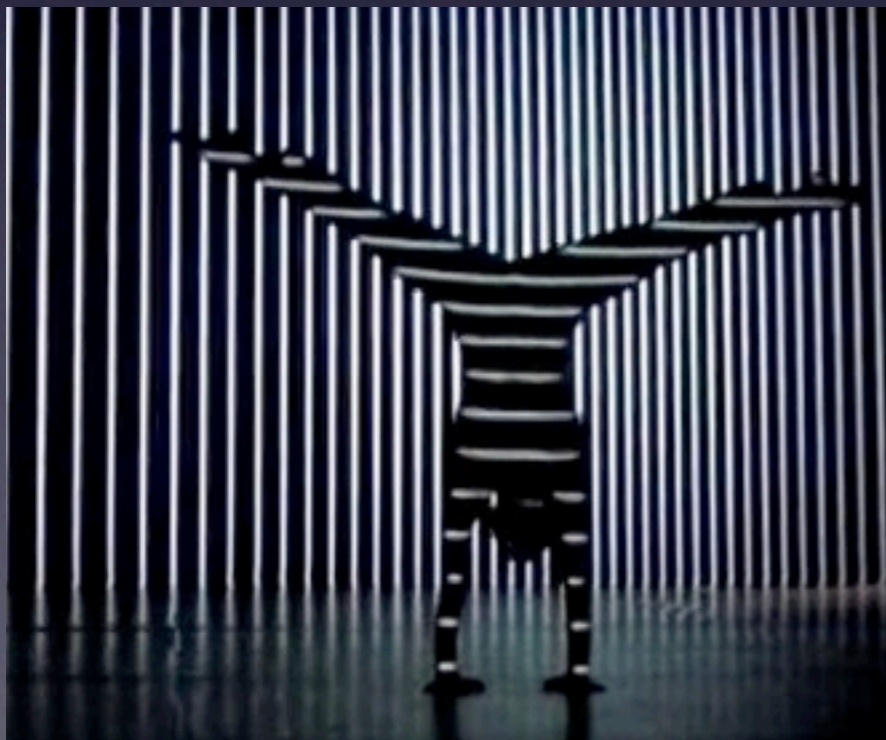
- [Opera Erratica \(link\)](#)
- [Musion Eyeliner](#)



projection mapping



- Klaus Obermeier



DAY ONE part I

- 1 **Conceptualizing** interactive interdisciplinary design.
- 2 **What is Isadora?** Setting up licences.
- 3 **Installation** procedures. **FreeFrame** plugins.
- 4 **Equipment** set ups (hardware)
- 5 Software **Preferences**.
- 6 Understanding **data types** and **efficiency**.
- 7 Introduction to the **user interface**.

DAY ONE *part 2*

- 5. Media playback & live inputs/outputs.**
- 6 Video effects.**
- 7 Core Video and sound effects (Mac only)**
- 8 Quartz Composer plugins.**
- 9 Triggers and generators for sound and video.**
- 10 Audio triggers from pitch and volume.**

DAY TWO part I

1 Setting up for **MIDI** and **OSC**.

2 **Nintendo Wii**. Converting gestures to data messages
via **OSCulator** third party software (Mac)

3 Controlling audio/video with **gesture & button data**.

4 Using **smart phones** as controllers (TouchOSC app).

5 **Live networking** with other softwares or computers.

DAY TWO part 2

5. Custom **User Actors**
6. **2D Video tracking** of a moving object (hand)
7. **Color video tracking. Multiple blob tracking.**
8. **Hands** as a gestural instrument.
9. **Kinect** camera.
10. Setting up an **Infra Red video tracking** system

DAY THREE part I

1. **Projection mapping** (Touch OSC + Quad Distort)
2. **Projection mapping** (Syphon + MadMapper)
3. Interactive control of **DMX**-based lighting
4. Building a custom interface: unique **Control Panels** for a digital media instrument or public installations.
5. **Text** as video. Text triggers. Animating text in 3D space.

DAY THREE part I

4. **3D particles & texture mapping.**
5. Options for **cuing** a performance in Isadora.
4. Refinement of participants instrument designs.