GESTUS

MOVING IMAGE PROCESSING FRAMEWORK

*G**estus** is a moving image processing framework that uses techniques from statistics and computer vision to explore the artistic possibilities of the vector as a symbolic form.

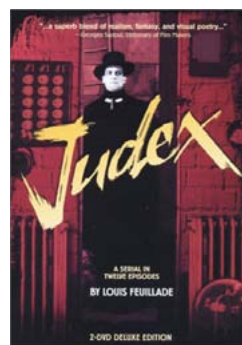The following video (online source) explains the artistic procedure.

A vector is an abstraction of movement. It is essentially characterized by two properties, magnitude and direction, and is often visualized as an arrow of a certain length and orientation. The vector provides a sort of common currency that renders distinct movements quantitatively commensurable.
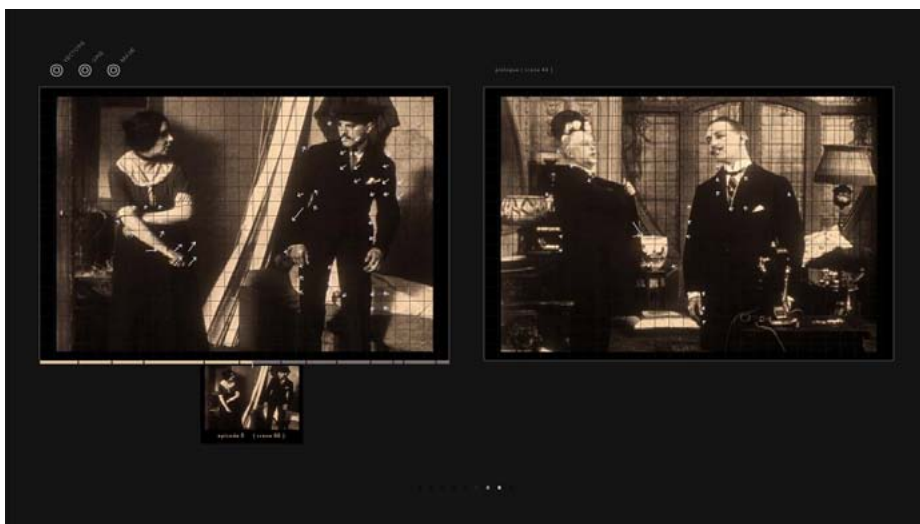
Gestus consists of a custom software that generates a vector analysis of the movements of videos in a database, identifying sequences that contain similar similar micro-movements.

The current database contains shots from Louis Feuillade's 1916 film Judex.

The software can be exhibited in two ways. The first is an interactive version with two windows. The left window displays the entire movie (over five hours of footage) from start to finish. Users can drag a cursor on a time bar to advance or rewind the movie. The software then searches for a shot that matches the motion of the current image, and displays it on the right window. This setup encourages viewers to pay close attention to the two images, trying to identify the similarities between them.
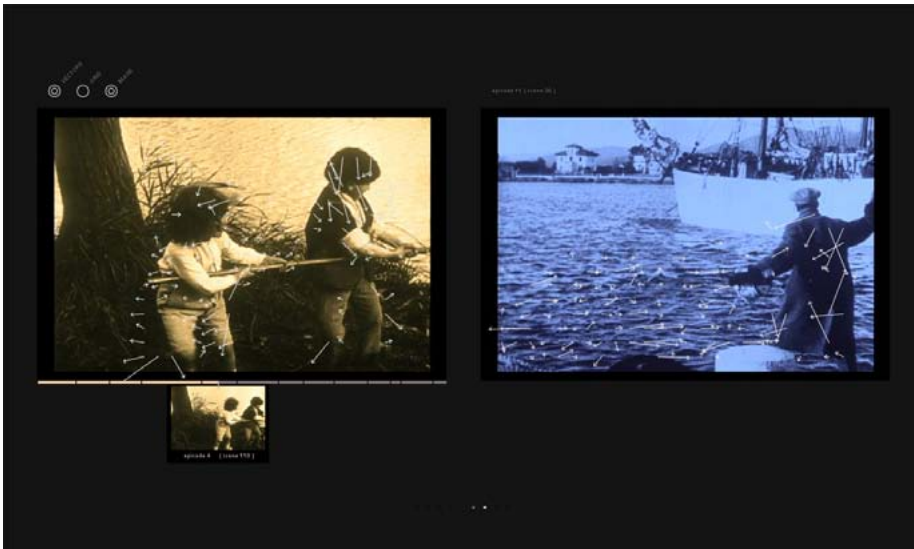

Judex
by Louis Feuillade

Whereas our experience of the cinema is normally directed towards people, objects, and events, Gestus encourages spectators to pay close attention to movement. Sometimes one has to recognize that two different objects, such as a person and the water, or a dog and a moving tree branch, are moving in the same way.

Gestus opens up the domain of micro-movement, focusing attention on the tiny motion of an eyelash or a finger. It cues the viewer to engage in an active process of visual thinking, comparing the images in an effort to identify the similarities between them. Her perceptual effort becomes an integral element of the vector's machine.

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The viewer's gaze becomes restless as it scans simultaneous images, attempting to identify analogous movements. Sometimes, the viewer easily detects similarities but in other cases the movements are very subtle and occur in different areas of a crowded image, posing a sharper perceptual challenge. Perhaps a dropping hand near the bottom of one image corresponds to a leaning shoulder near the left edge of another. The viewer's gaze becomes restless as it scans simultaneous images, attempting to identify analogous movements. The system invites, challenges, and sometimes frustrates the spectator's cognitive-perceptual skills.

Users can also turn off the image and simply view the vector field that forms the basis for the comparison.

Another mode of presenting the work involves a 9-image grid. The movie runs from beginning to end in the center of the screen. The 8 shots (from the same film) whose movements most closely match those in the current shot are arranged around it.

The work was premiered in Hong Kong, as part of an exhibition curated by Robin Peckham in the Run Run Shaw Creative Media Centre of the City University of Hong Kong. The interactive display and the 9-image version were shown together.

There are several reasons why Feuillade's Judex was selected for this work. Feuillade worked within a tradition of 'tableau cinema' that relied on deep space staging rather than camera movement or analytical editing. This approach creates dynamically changing geometric arrangements of bodies in space, carefully directing the viewer's gaze to salient features of a scene on a moment-to-moment basis. "Such gentle geometries of movement hard to find in today's cinema, and observing them in Feuillade reminds us that long ago some directors crafted their images as two-dimensional patterns of bodies in space." (1) By focusing attention on the magnitude and direction of movement rather than its iconic content, Gestus foregrounds the rhythmic quality of Feuillade's deep space orchestrations. Judex foregrounds the director's poetics of motion and space.
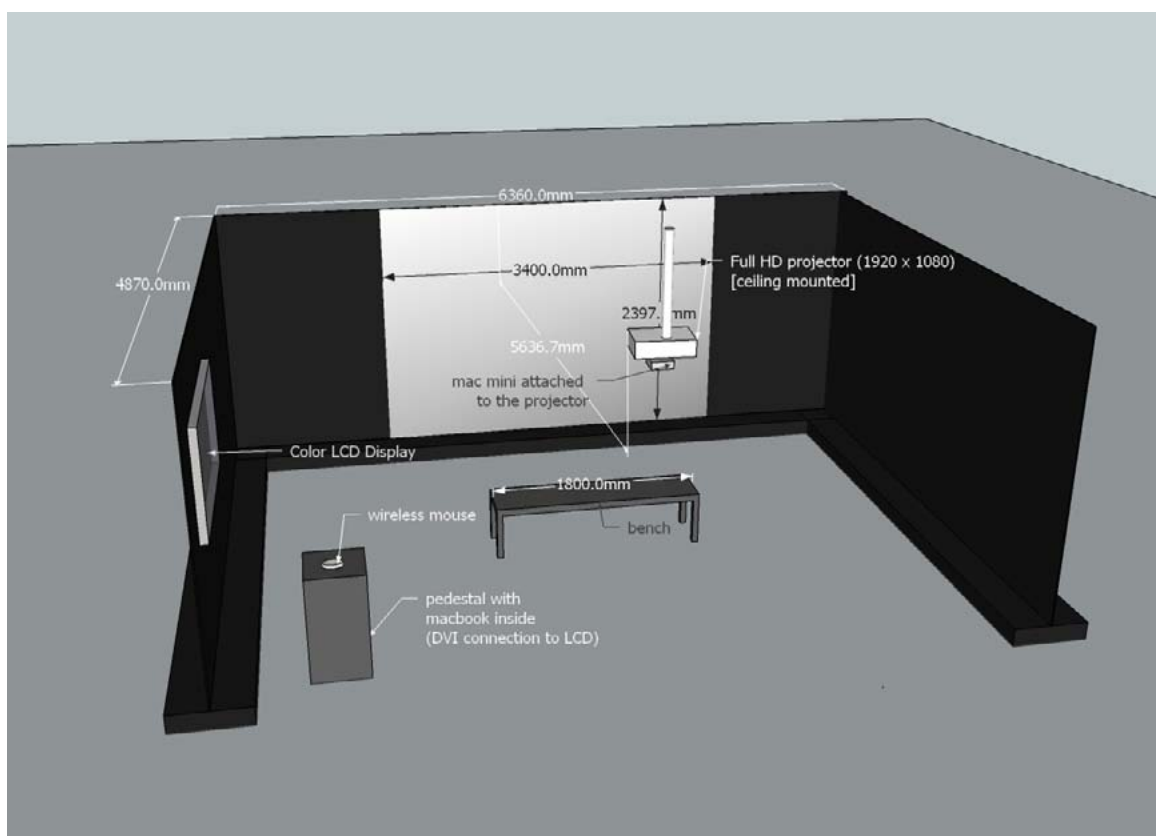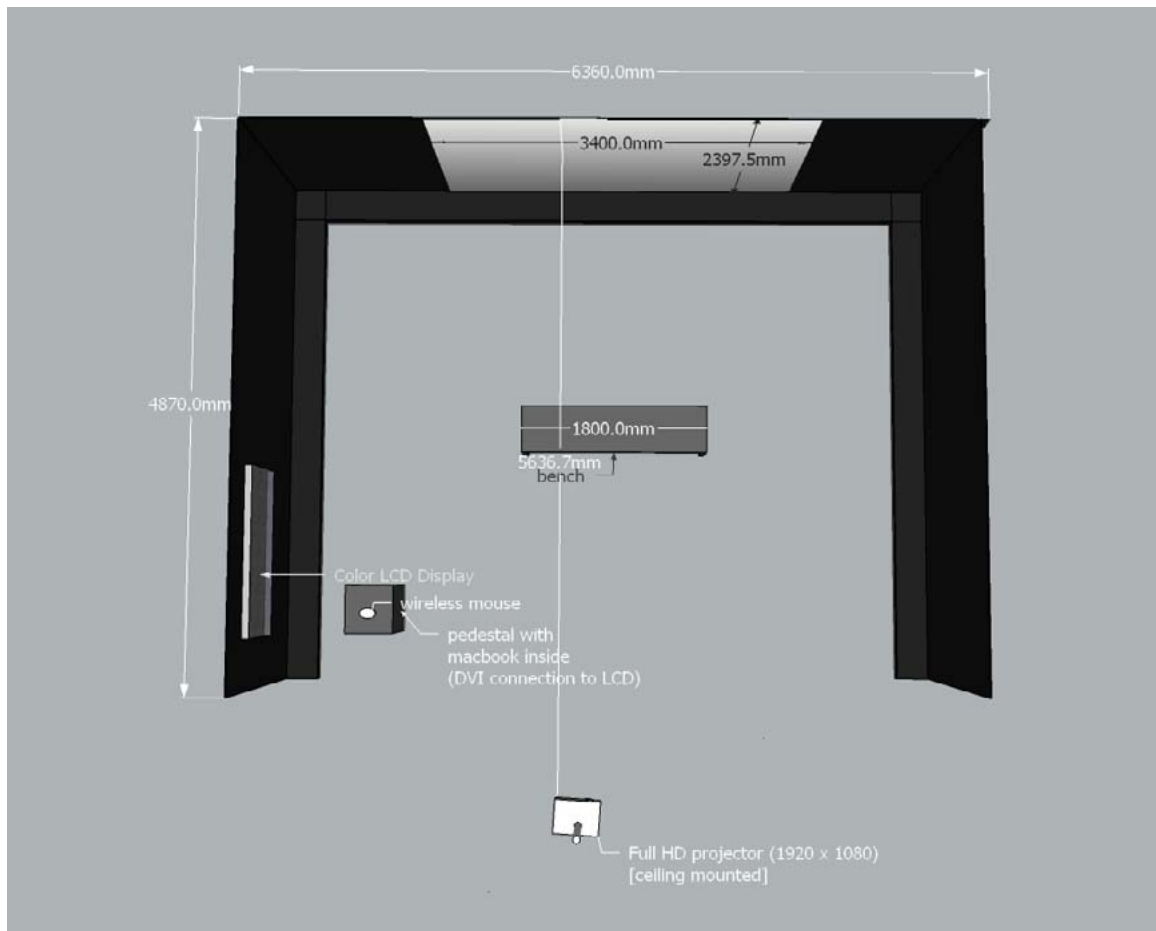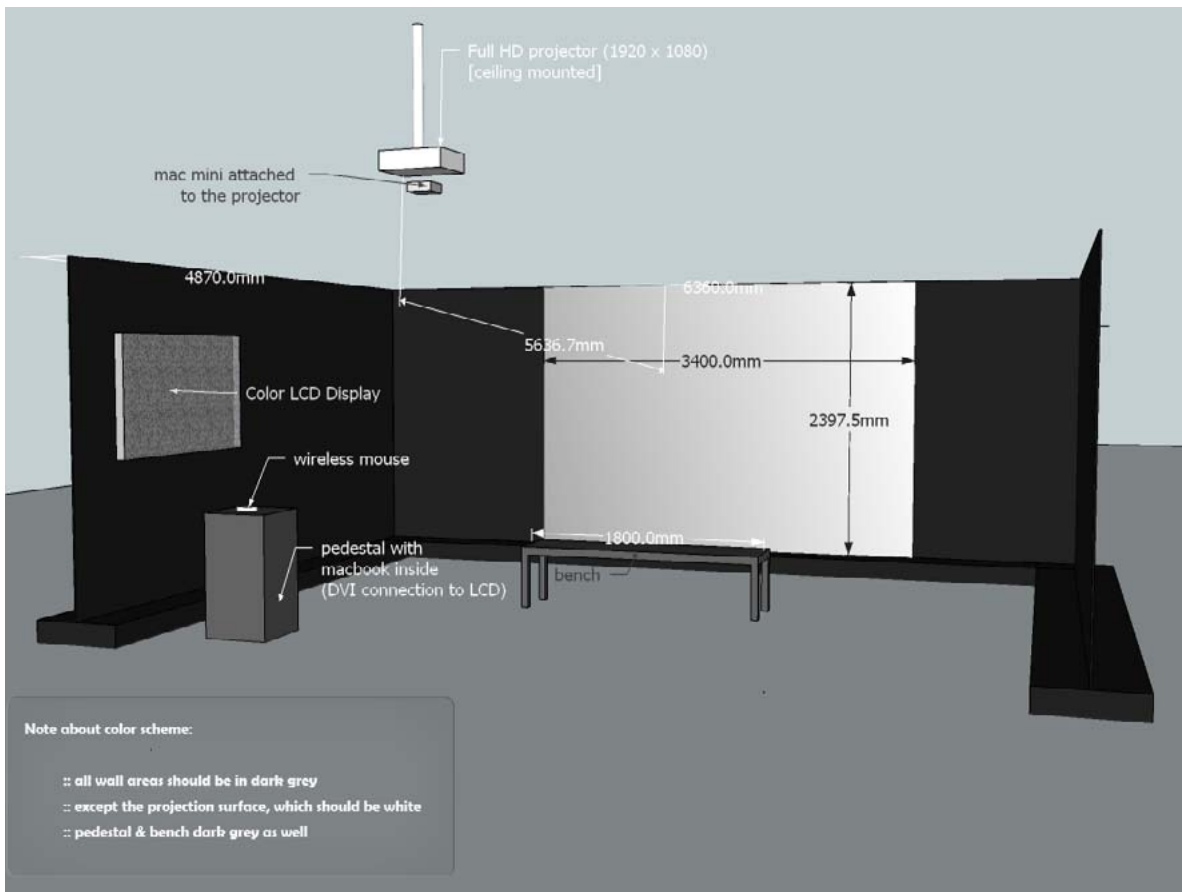

(1) David Bordwell, "Revising Our Sense of Feuillade", Retrieved September 1, 2011, from http://www.davidbordwell.net/books/figures_intro.php?ss=2

Proposed exhibition setup

This version includes the 9-screen projection and an interactive version on an LCD monitor.

Full HD projector (1920 x 1080)
[ceiling mounted]

mac mini attached
to the projector

4870.0mm

6360.0mm

5636.7mm

3400.0mm

2397.5mm

Color LCD Display

wireless mouse

1800.0mm

pedestal with
macbook inside
(DVI connection to LCD)

bench

Note about color scheme:

:: all wall areas should be in dark grey

:: except the projection surface, which should be white

:: pedestal & bench dark grey as well

Hardware Minimum Requirements

The application runs sufficiently on the following setups.
Similar or better configuration should do the job

Interactive Version:

- Full HD LCD Screen(1920 x 1080)
- Mac book Pro, Intel 2.2 Quad-core i7, 2x2GB RAM

OR

- PC Intel Core i5 @2.67 GHz, 4GB RAM, PCI-E ATI RADEON 4600 series 1GB RAM

9-Screen-Projection:

- Full HD Projector (1920 x 1080 native)
- Mac Mini Or Media Player able to hold 100GB of Data and play back HD resolution footage compressed with H.264

Credits

artist / technical director : hector rodriguez

programming : philip kretschmann / hector rodriguez

research : janice leung / hector rodriguez

computational advisor : mike wong

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