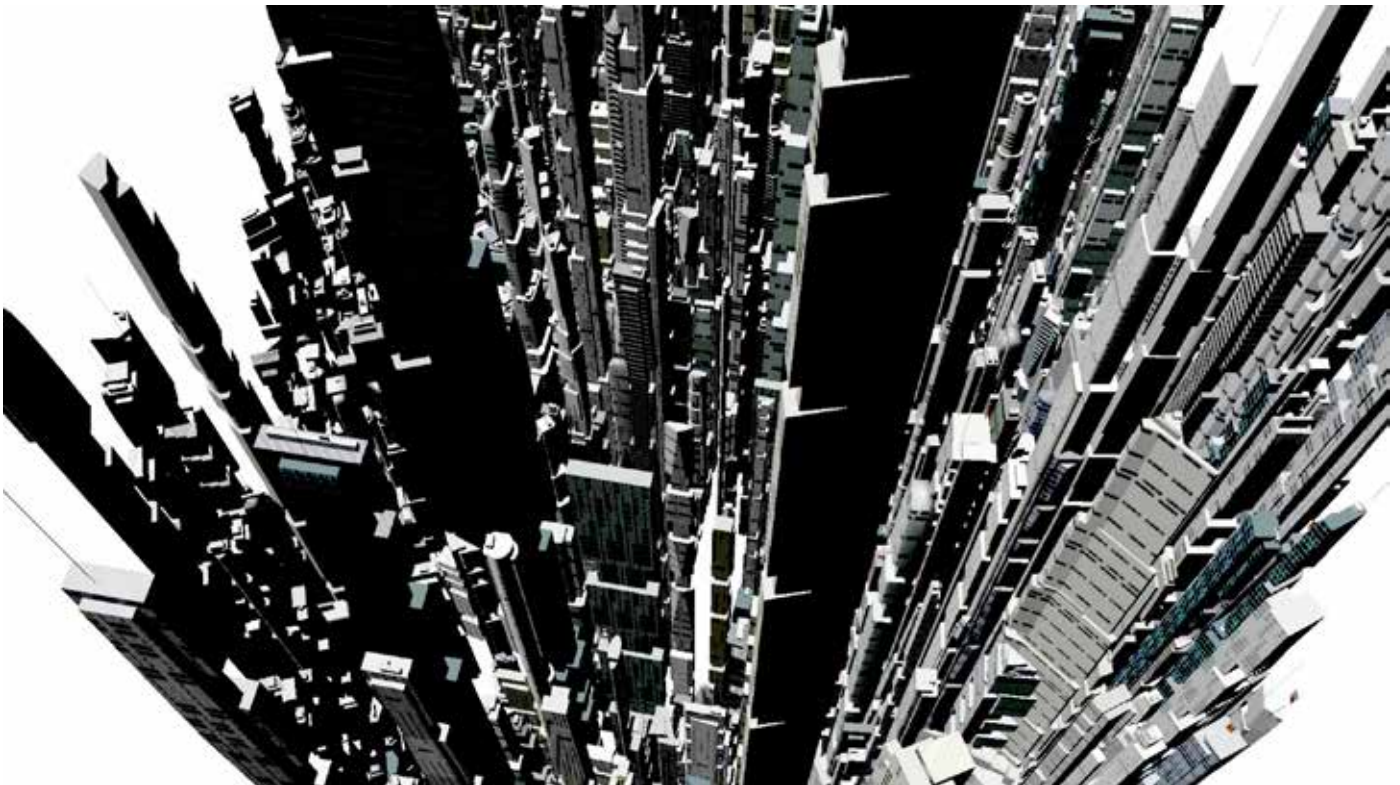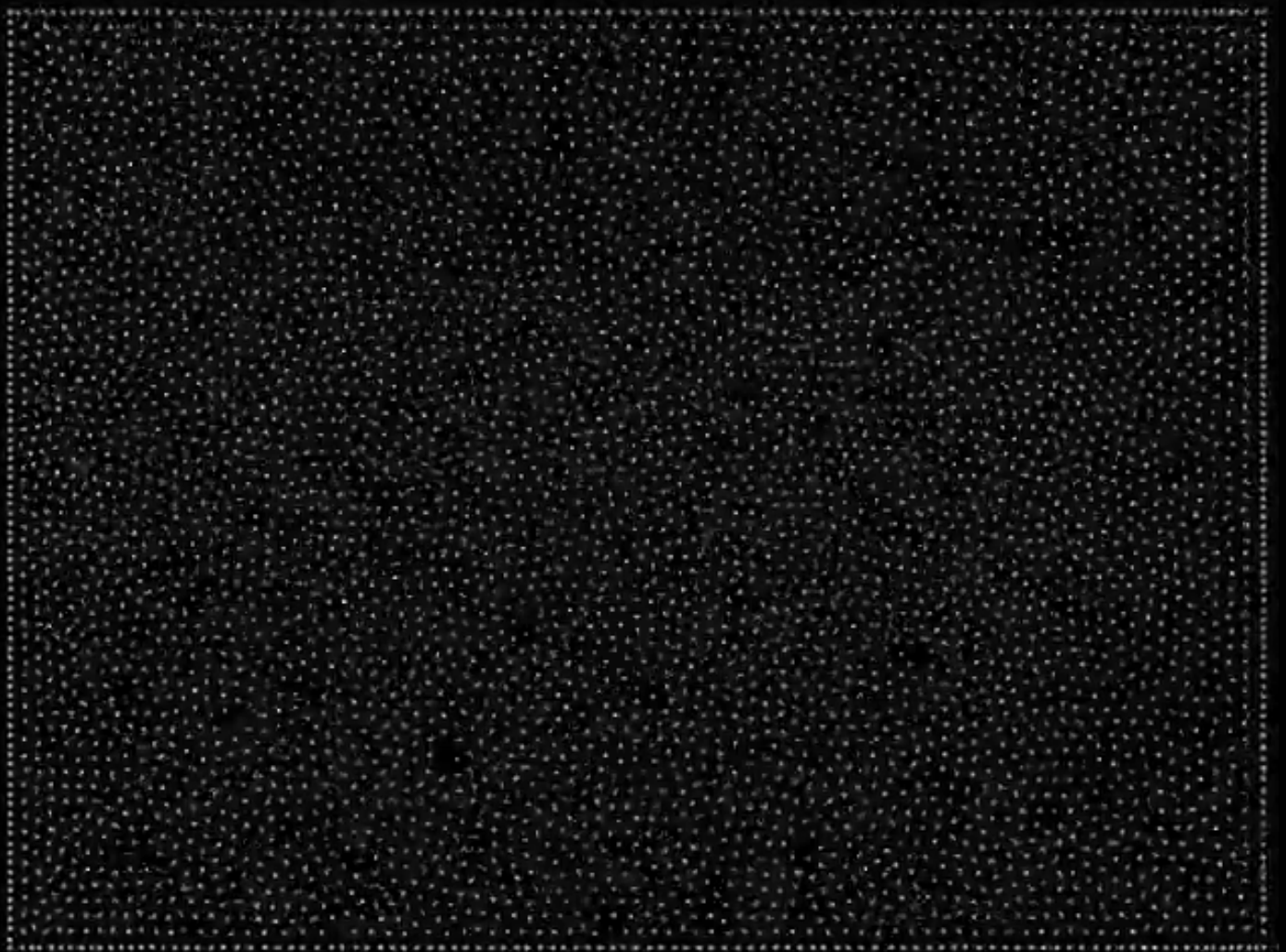# Presentation of interactive installations, and motion capture projects

created and produced by Jean-Marc Gauthier, All Rights Reserved 2014
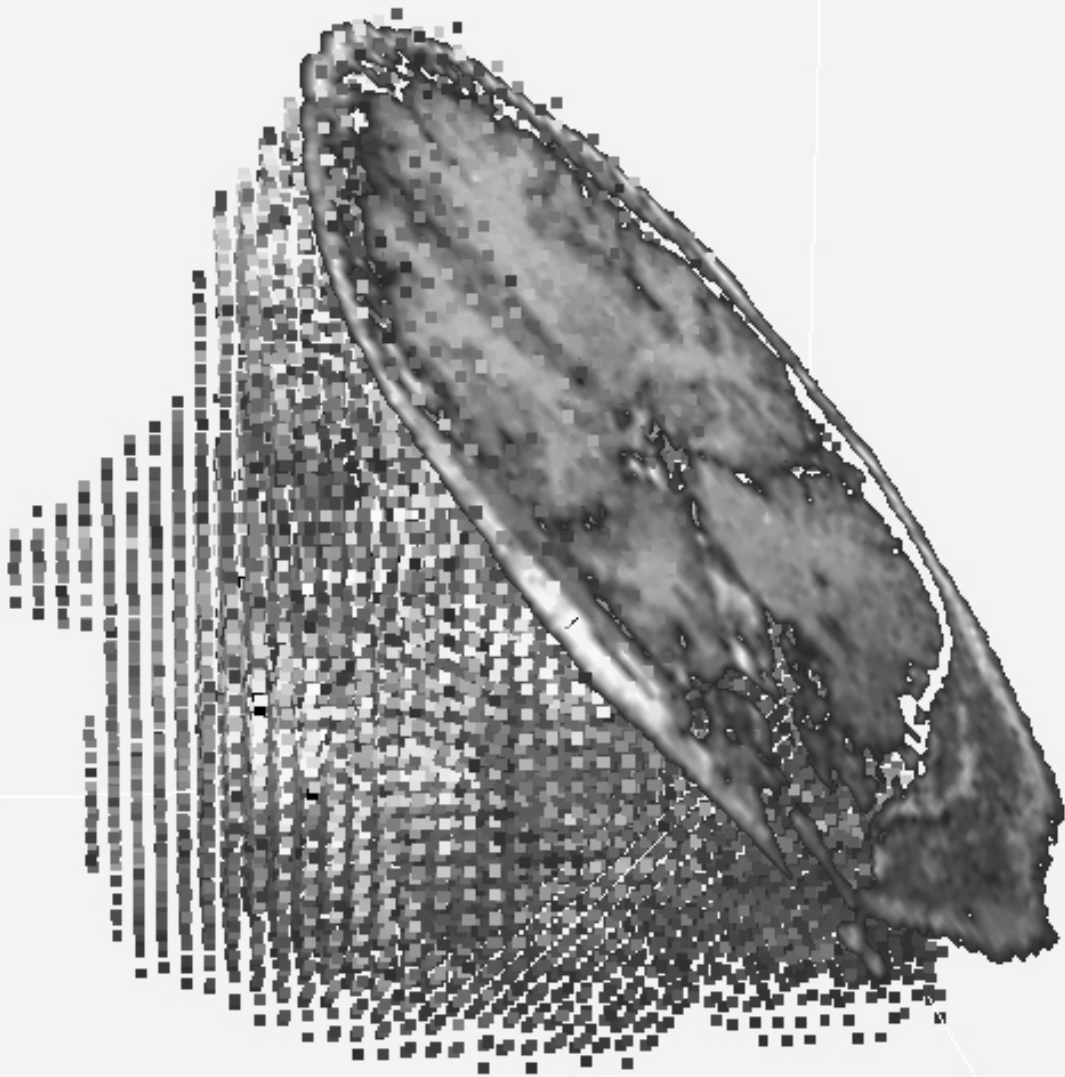

The sound of the City Jean-Marc Gauthier
3D interactive camera moving according to the viewer's voice

Watch the video, https://vimeo.com/62392719

Dust, a 3D animation transferred to film 35mm,
for Melvin Motti's installation "From Dust to Dust".
More at http://www.tinkering.net/portfolio2014/page2/index6.html

Watch the video, https://vimeo.com/113683185

Interactive navigation inside the brain Jean-Marc Gauthier

The interactive visualization is designed for a neurosurgeon in the operating room. The viewer can navigate the virtual brain in any direction using head movements regardless of the orientation of the original slices of the MRI.

A web browser allows 3-D navigation inside a brain using a cloud of voxels, or pixels,
located in space. Since the images of slices of the brain are displayed in space they can be visited from many angles, including new angles that were not included in the original pictures. This is key to enabling freer navigation.
More tinkering.net/brain/
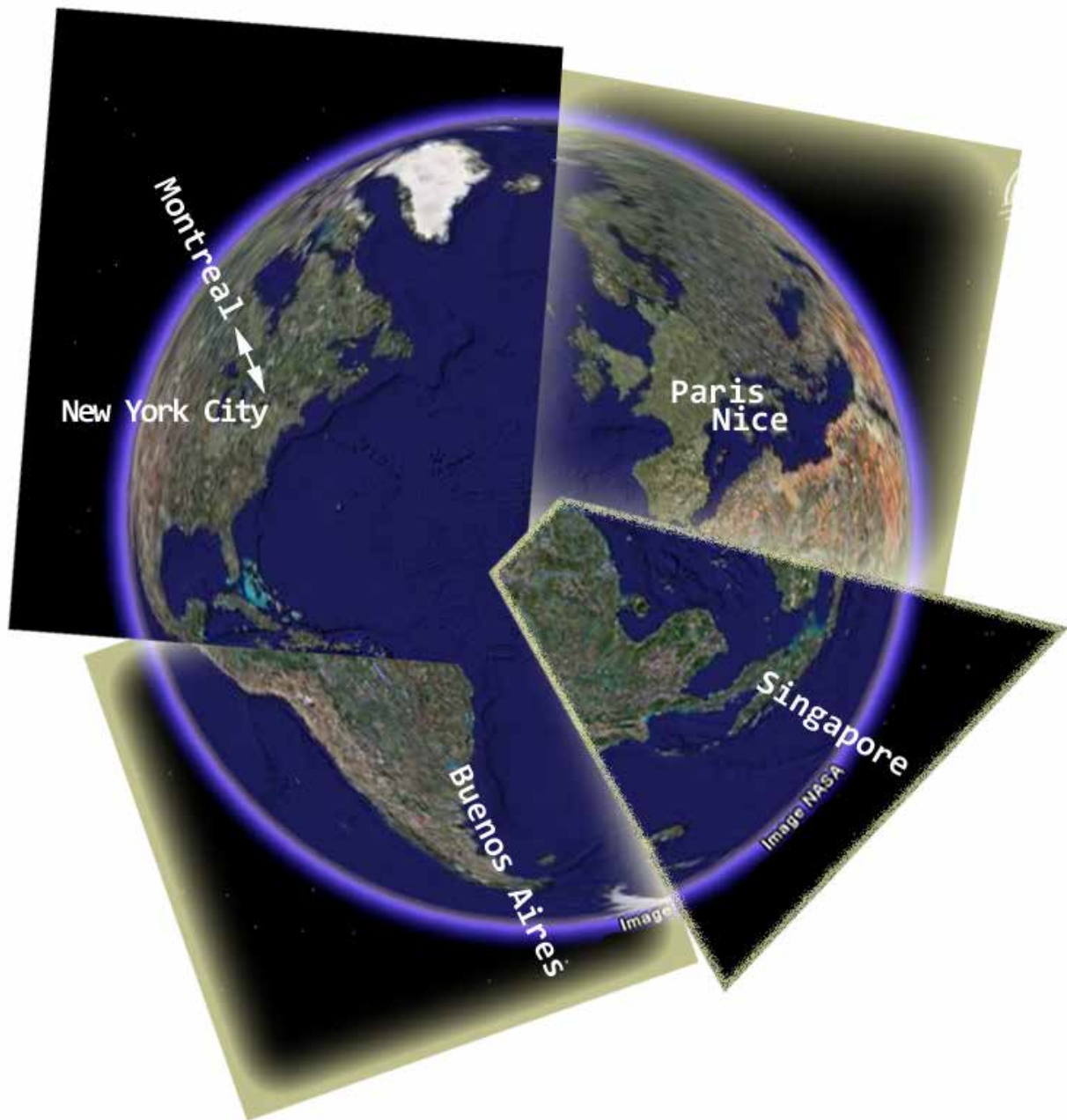
Installations have been presented in places around the world at venues internationally including the American Museum of the Moving Image (NYC), the Institute of Fine Arts (NYC), Chelsea Art Museum (NYC), File Festival (Brazil), Ars Electronica Festival (Austria), Villette-Biennale Numérique (Paris), Le Cube, MAMAC (France), Siggraph Asia (Singapore), ArtScience Museum (Singapore), DaeGu (South Korea).

Crosswalk Jean-Marc Gauthier.
Joint project with Dr Lei Liu
Client: Lei Liu, Phd, UAB- Vision Science Research Center, University of Alabama, USA

More at http://www.tinkering.net/portfolio2014/page2/index5.html

What they wrote: Testimonial from Professor Lei Liu, PhD
"We credit our success to the high-quality and excellent performance of the virtual reality simulator and street intersection scenarios that you built.

The virtual reality simulator and street intersection scenarios have the high visual resolution, wide field of view and high contrast we need. The car and pedestrian traffic is very smooth and traffic rules are strictly followed.

The street intersections are true 3D models, which allow us to set up a wide range of street crossing scenarios by moving the virtual cameras around.

This is a very powerful research tool, an envy of many of my fellow researchers."
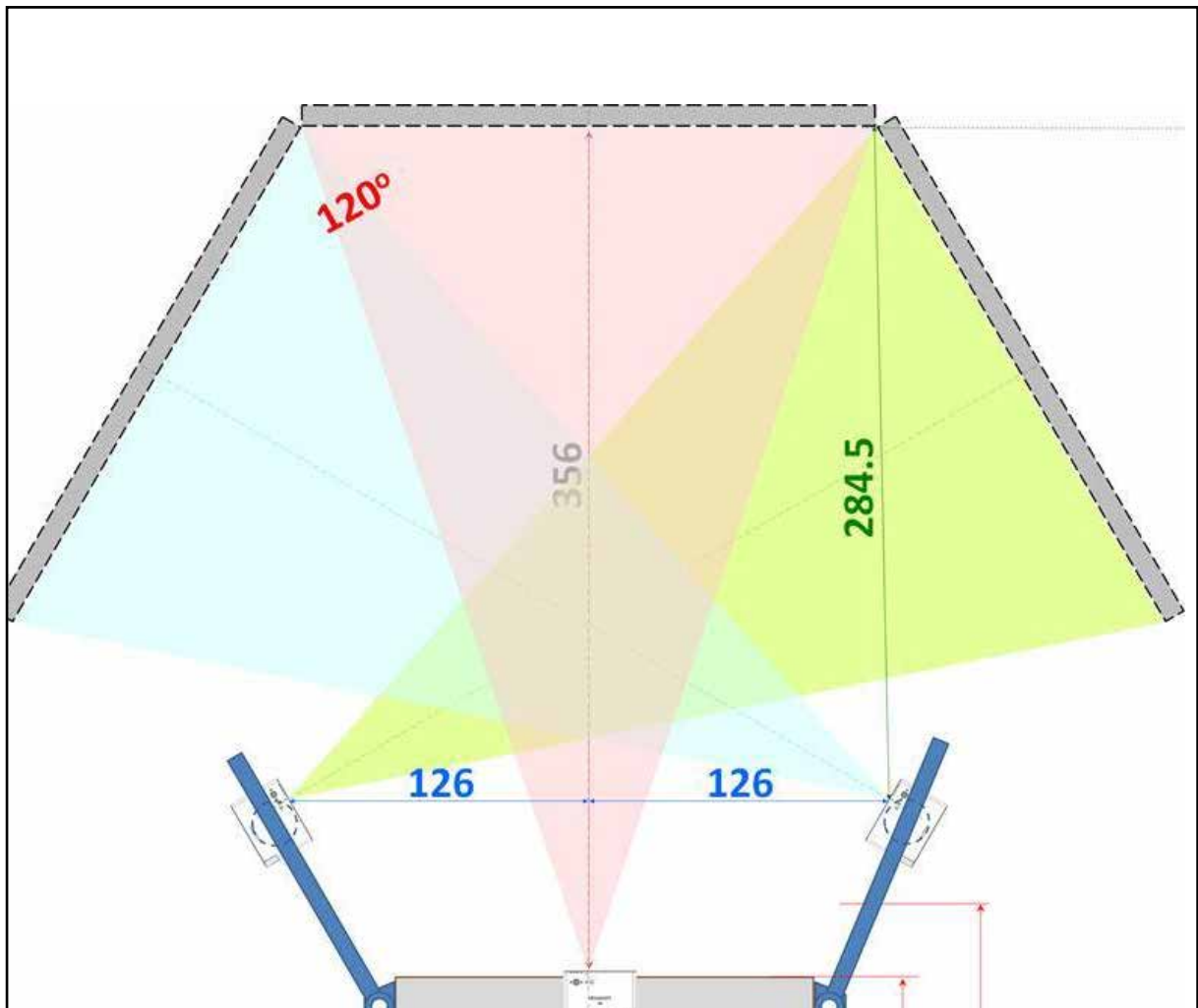
Top view of the installation showing the projectors and the screen. This display will provide a front and peripheral vision which are accurate for the viewer.

The display is a very important part of the viewers experience of an installation. **Crosswalk** uses an immersive 3 screens display technology that allows seamless visuals between the screens. This is an important element of suspension of disbelief for the viewer or the user.

The visuals on the 3 screens are captured by a node of three virtual cameras located inside the virtual world. The virtual cameras are centered on the user standing inside the physical space. The main innovation has been to achieve a 15 ms synchronization between moving images of the cars and the moving sound nodes attached to the engines of the cars.

In the case of **Crosswalk**, the simulator is designed to be operated by anyone. It has a visual user interface, a menu, which allows to make choices and to change the parameters of the scene. It can save a user profile in order to repeat a session. The maintenance was done remotely.

We designed a robust system that does not break during long sessions with many different users. We designed a custom built single PC with several video cards that could manage all the screens and the sound. This was created in order to cut latency and to improve the overall speed of the whole system. In other words, we were interested in the speed of the whole system from the point of view of the viewer's eyes and ears. This may be much slower than the speed of the hardware because of long wiring, the refresh speed of the video projector, the location of speakers in the room.

We chose a system that allowed to develop one version of the content that could be used on various media: web browser/tablet based application, in addition to the simulator.

Watch the video, http://vimeo.com/78089762

Interactive Urban Simulator Jean-Marc Gauthier

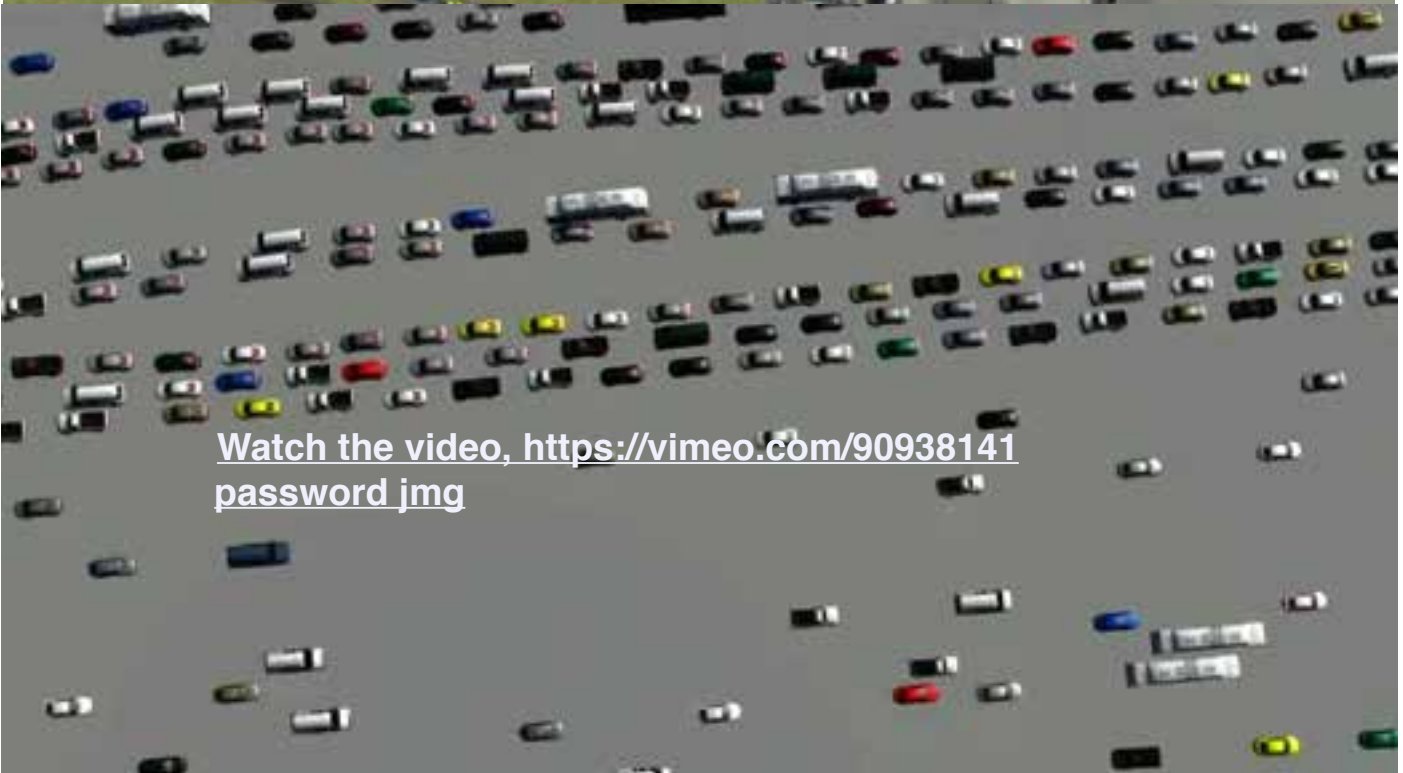**3D map with dynamic behaviours = a traffic simulator**
Brief: Show me the traffic in real time

Goal: Finding information using a dynamic 3D map

Design: An interactive camera shows a global view of the traffic during a 24 hour period.


Watch the video, https://vimeo.com/90937545

Watch the video, https://vimeo.com/90938141
password jmg

The goal of the installation is to present a digital road and a connected car that send messages and display information when pedestrians are in the vicinity of the car. The surface of the road and some of the car body panels display real time visual communication between pedestrians and the connected vehicle.
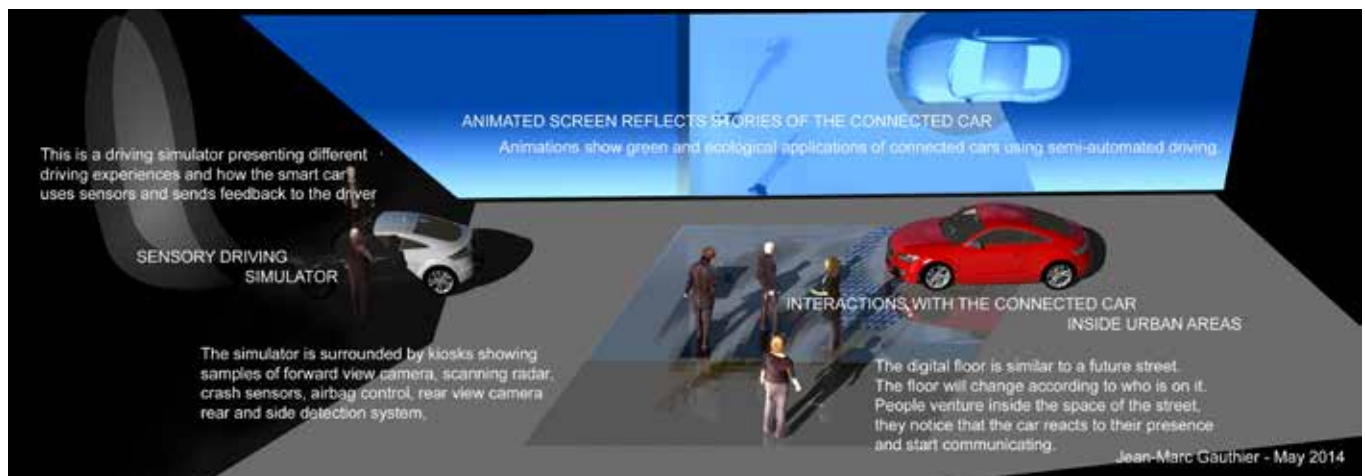
# Interactive installations with cars

Jean-Marc Gauthier

The connected car project is an interactive installation showing a car that reacts to the presence of pedestrians. The connected car and the visitors of the installation are on top of a digital floor that reacts in real time with visuals and sounds when they walk towards the car.

This ongoing project offers an interactive experience of a car(s) connected to pedestrians and the space around them. What about a connected car that reacts to people and to its environment?

3D spherical display to navigate inside a 3D map of Manhattan (New York) without the need to scroll the map. The background of the map is made of personal pictures stored on the phone.

Watch the video, https://vimeo.com/78144659

3D map for smartphones Jean-Marc Gauthier
Interactive installations at FMX Stuttgard (Germany), Daegu (South Korea)
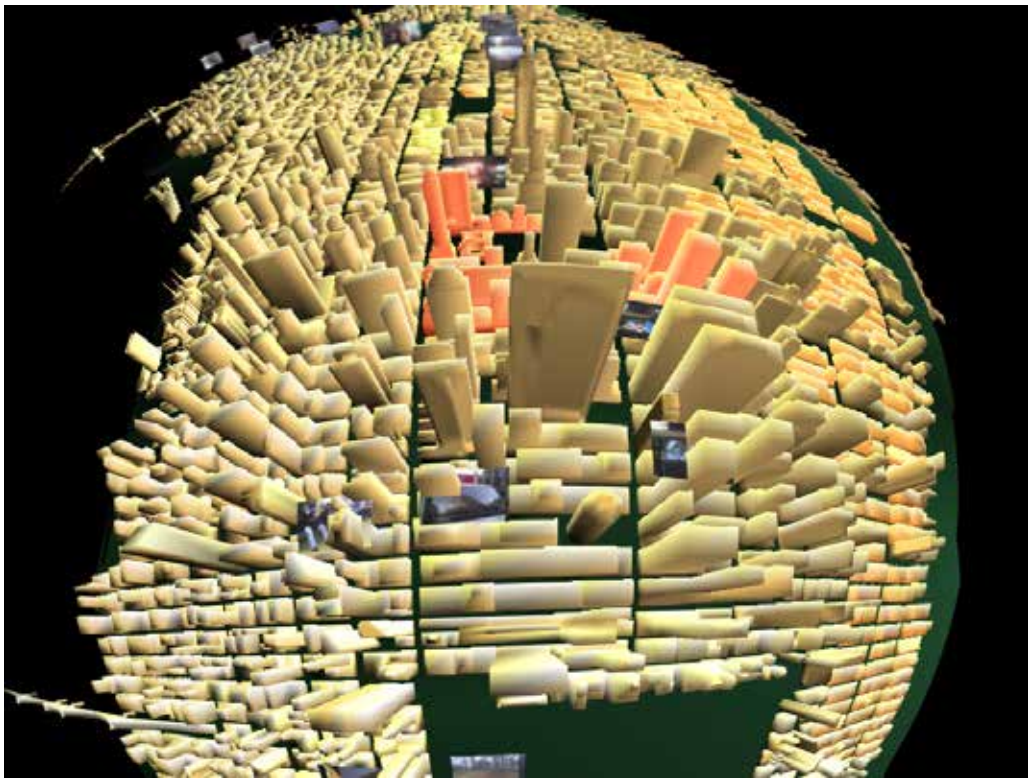
City viewed through a spherical virtual camera
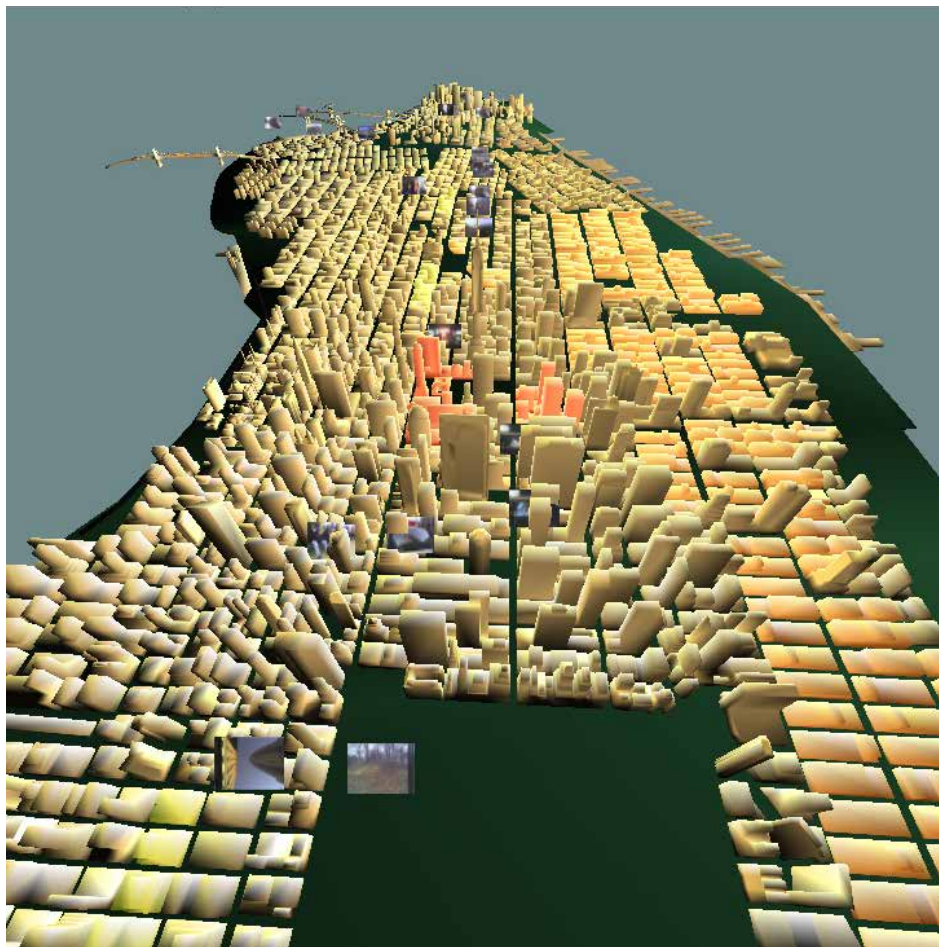
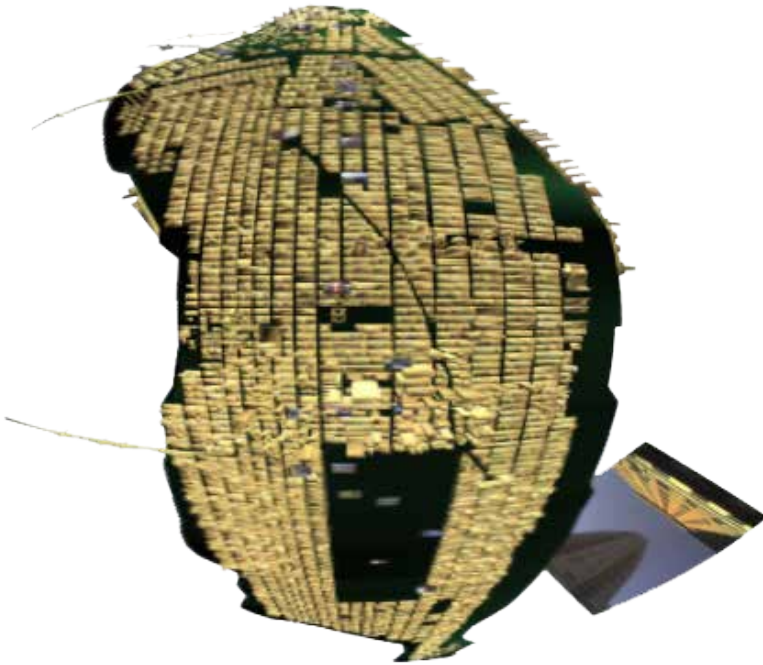**3D map for smartphones** Jean-Marc Gauthier
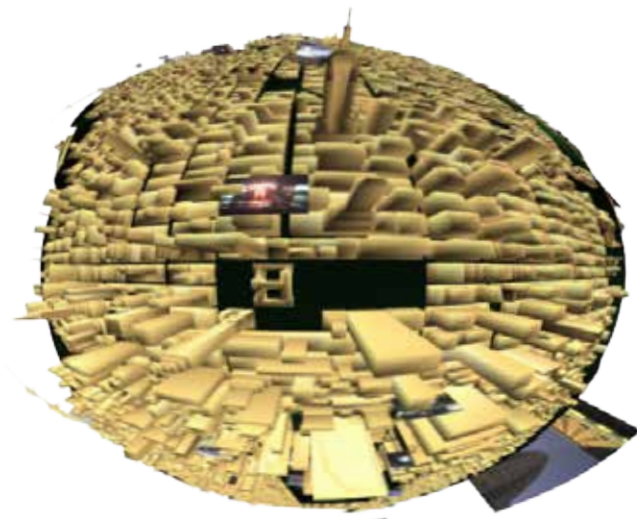
3D map for mobile phones Jean-Marc Gauthier

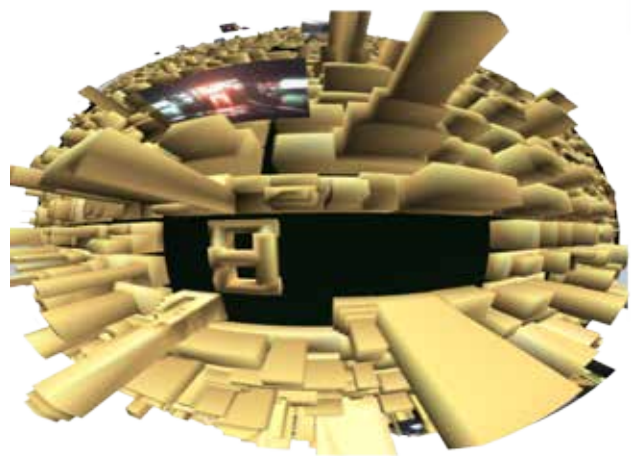Request: "Show me Bryant Park."

Answer comes in three interactive steps.

1. Refers to a collective memory
of the shape of the city.

2. Reduce Urban Complexity

3. A personal interactive experience

Infinite City Virtual reality installation with J. Tunick and M. Kirov, Convergence, Chelsea Art Museum, NYC, USA

Recapturing Life Class Instructors Jean-Marc Gauthier and Chris Bregler

Watch the video, https://vimeo.com/60890086

Design and setup of a Motion Capture Lab Jean-Marc Gauthier
markerless system using Organic Motion technology.
ANDA, Tisch School of the Arts Asia, New York University, Singapore

Organic Motion has a markerless mocap system that offers a lot of flexibility. It captures the movements of the viewer walking freely inside of a 3D volume. This system is compatible with video projections on screens.
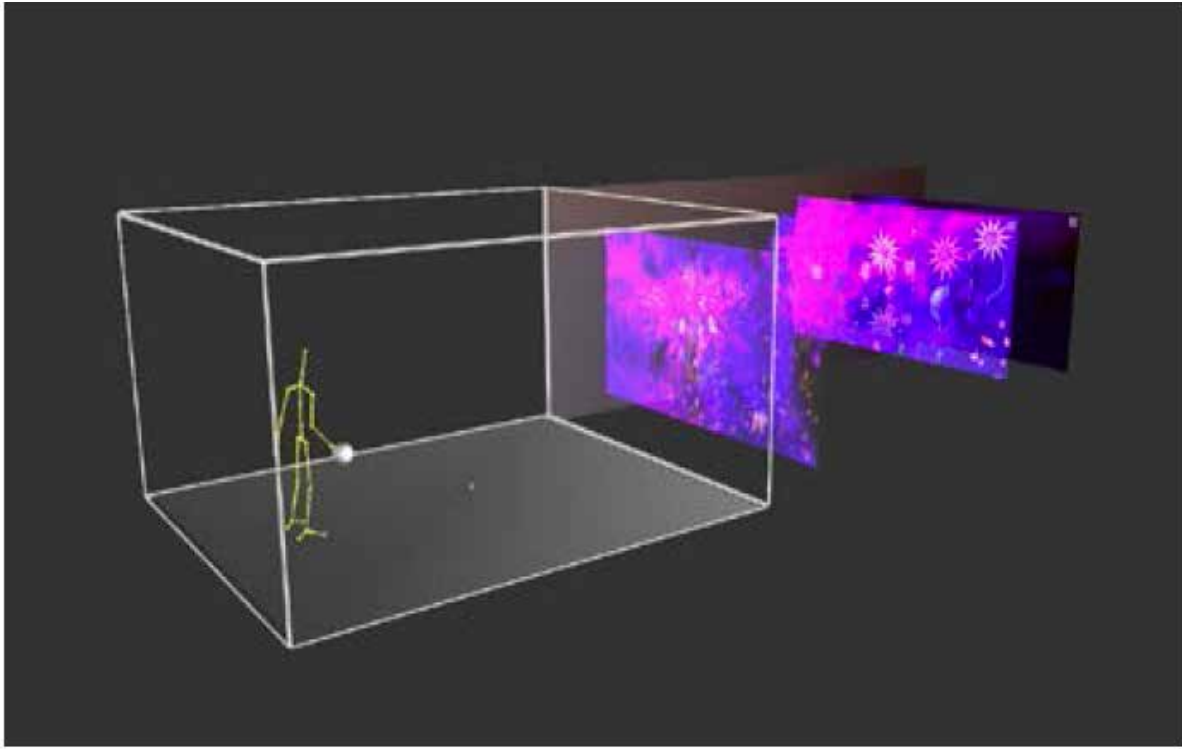

Design of a motion capture pod using a markerless system with Organic Motion technology. Sony Wonder, New York, USA

See a project using Organic Motion at
http://www.tinkering.net/portfolio2013/siggraph2010.pdf
Watch video at http://vimeo.com/60890086

Virtual Garden Jean-Marc Gauthier
installation at ArtsScience Museum, Marina Bay Sands, Singapore 2013

Based on the concept of the 3D storyboard, I created this example of one-on-one interaction between a viewer and a virtual world projected on the screen. Using motion capture, the actor holds a sphere that tracks the right hand. This technique is useful in expressing the interaction and the 'look and feel' of touching virtual objects.
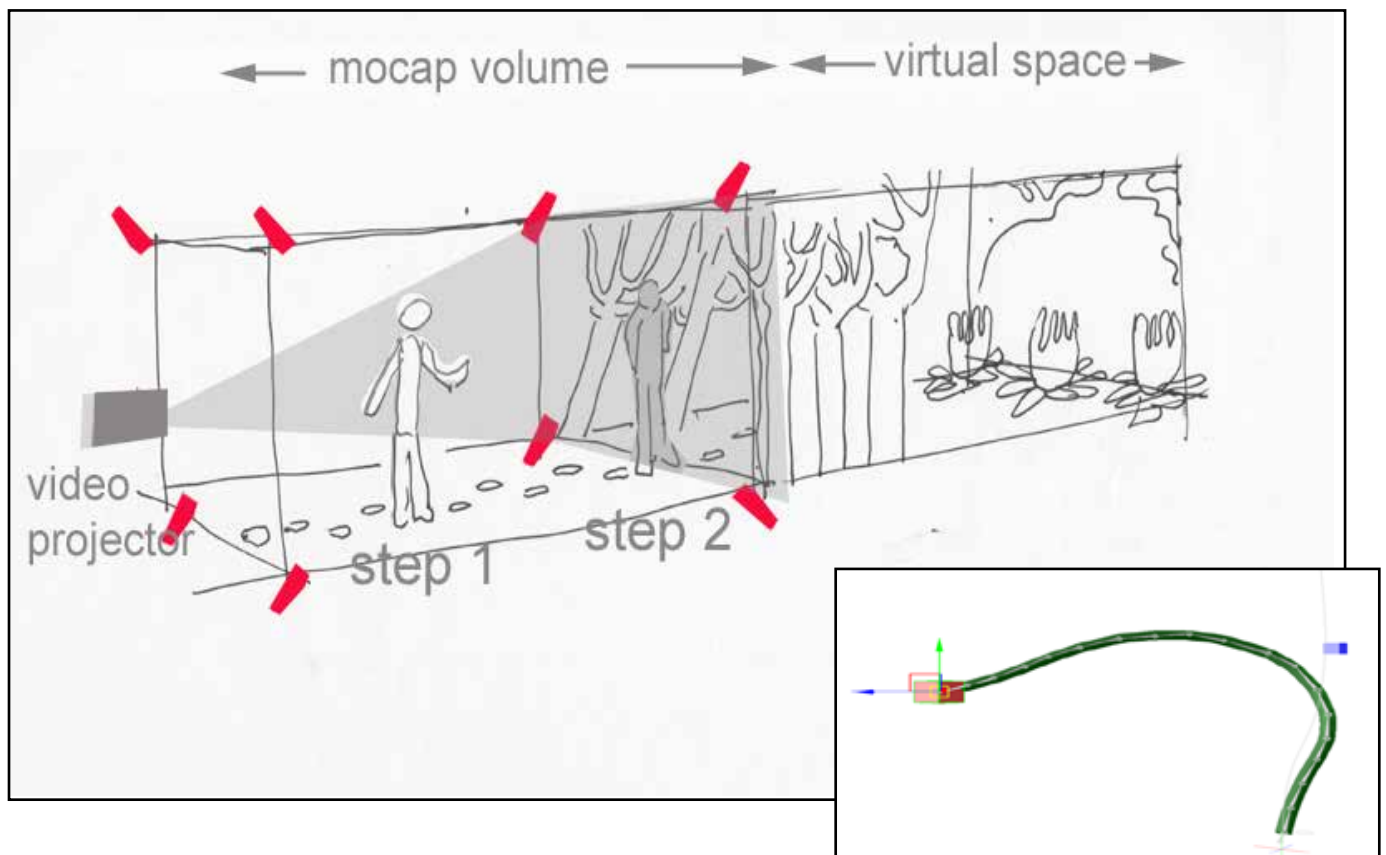
Artistic and technical details of the **Virtual Garden** (Kinect) installation at ArtScience Museum, Marina Bay Sands, Singapore, 2013

Motion capture performance allows animators to create scenes from a story. Animators can map a three-dimensional scene of a story inside the motion capture volume. This offers the possibility for the study of the interactions between actors, animated characters and the elements of a scene.

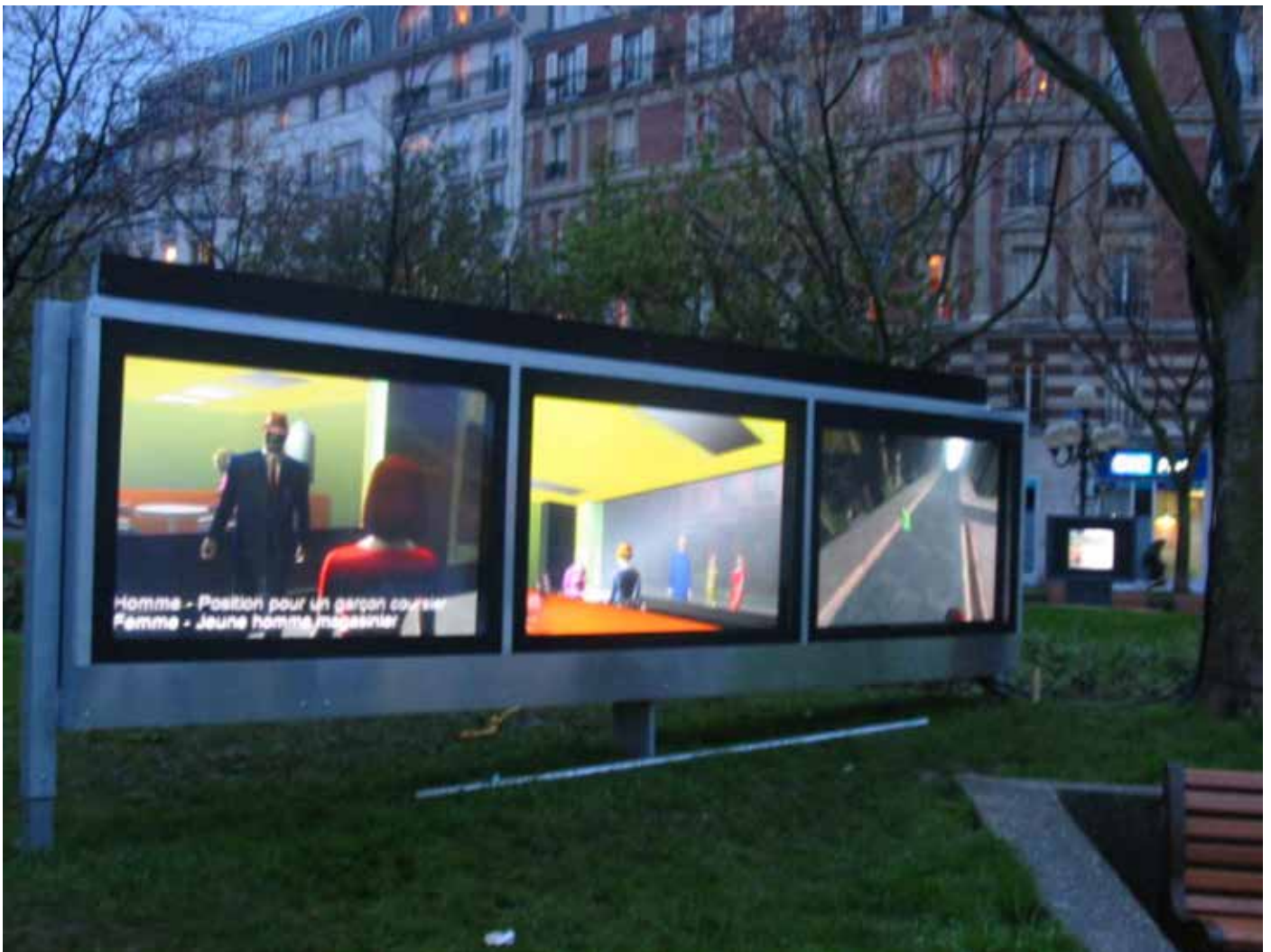Read about "Virtual Flowers" an interactive installation using Kinect
http://www.tinkering.net/portfolio2014/flower.pdf

Virtual Garden
interactive installation, ArtScience Museum, Marina Bay, Singapore

Crayons
interactive installation, Affordable Art Fair, Singapore

Nighthawks Jean-Marc Gauthier
Urban 3D game installation, Festival 1ier Contact, Issy, France

What they wrote:
Noa Steimatsky, Phd,
Associate Professor of the History of Art and Film Studies, Yale University

"He understands better than many theoreticians, I think, the imaginary dimensions of actual space and, at the same time, the practial implications and responsibilities of virtual space."

"Jean-Marc's analysis helped me ask myself some old questions in new ways: on optics and mental process which are so often used as metaphors for each other, on how cinemas's mode of articulation- camera, movement, framing, editing - informs us about viewing habits generally, and about how those may be subverted."