

Sonifying Surveillance

What is Sonification?

Sonification is the use of non-speech audio to convey information. More specifically, sonification is the transformation of data relations into perceived relations in an acoustic signal for the purposes of facilitating communication or interpretation. (Sonification.de, 2015)

Video Sonification

Video Sonification is the process of translating or mapping video information into sound, hybridizing aspects of sound design, visual music, experimental music and spectrographic sonic representation. (Filimowicz.com, 2015)

What is the video source?

I would like to investigate the use of live web cameras and IP cameras with a view to sonifying them. It is possible to view video feeds, through a browser, of many web videos throughout Ireland and the world. Many web camera feeds come from cameras that are placed on top of buildings in city centre locations and offer a live view of the locations.



Figure 1: Templebar, Dublin view from EarthCam

These video feeds could be considered as data sources to drive the sonification process.

A number of websites exist where it is possible to view video feeds from IP cameras. Many of these are privately owned but are available to view none the less. These could also be used as sources to mine for data. Many of the Irish IP camera feeds include video from churches and milking parlours alongside offices and garage forecourts.

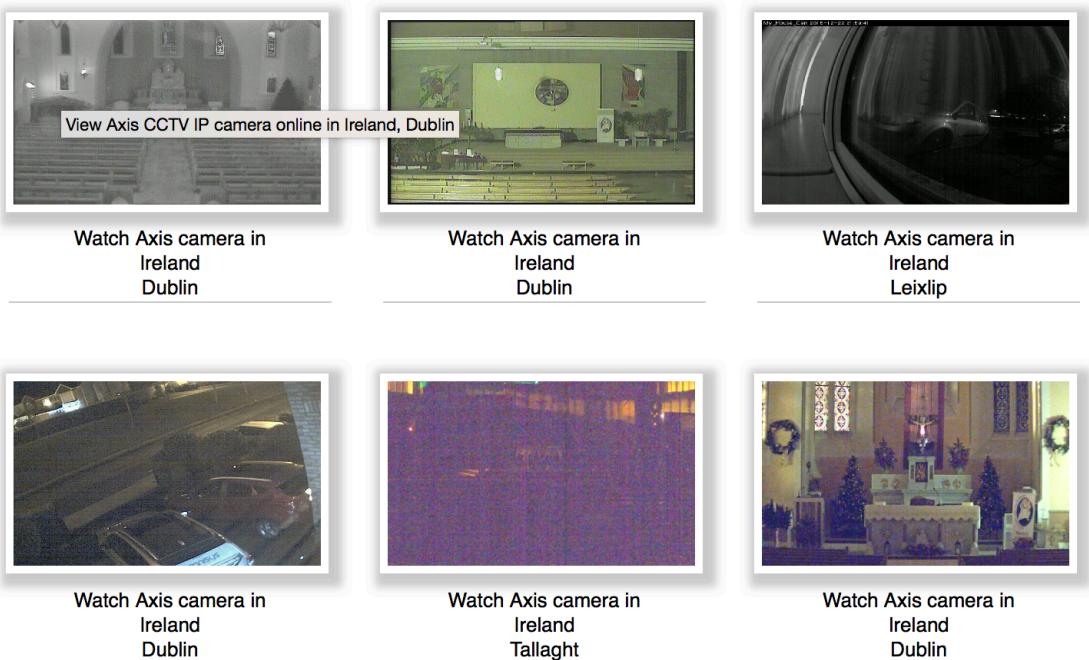


Figure 2: Irish IP camera feeds from insecam.org

Installation

I would like to use the video feeds to harvest data that could be used to create a sound and video installation. Using video sonification techniques such as mapping brightness and RGB value changes with computer vision techniques like motion detection; it should be possible to create a soundscape based on the results.

At this stage of development, I can envisage an installation that displays a number of video feeds (surveillance cameras) on a large panel of screens or a large area where the video feeds are projection mapped onto a surface. Ideally, the feeds are live and software is analysing and processing the feeds in real time. As the feeds are being analysed, the sonified results that have been generated, are playing back in real-time through speakers in the space. At present, it is undecided whether the sounds will be atonal or tonal.

I would like to then use a Microsoft Kinect camera to track users in the space and use that data to control or affect parameters of the sound also.

I would also like to project, onto a second screen, the image that the Kinect camera sees onto a selected IP feed. Another idea is to record some IP cam footage and compose a pre-rendered edited video of IP camera feeds. This pre-rendered footage could be used as a background to the superimposed feed from the Kinect camera as well as a video data source.

For my undergraduate final year project I created an installation that could identify a number of users (6), remove them from the background and add graphic effects around their body shapes. Something similar could be achieved during the proposed project.

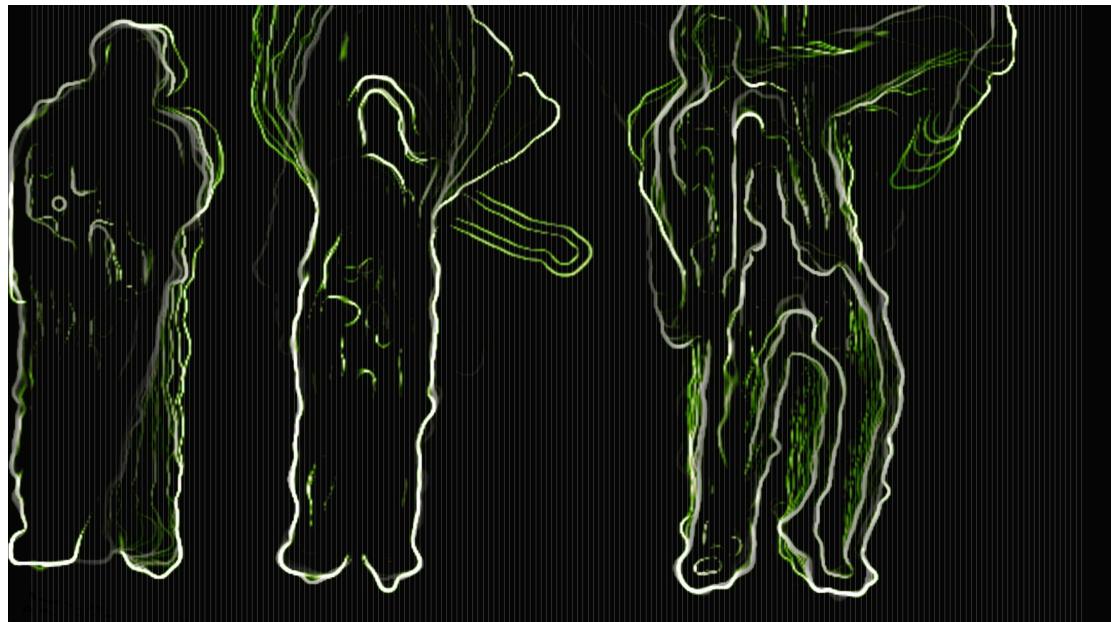


Figure 3: Still from undergraduate project.

Surveillance Art

A number of works are known to be associated with a genre called 'Surveillance Art' where concepts surrounding online privacy, surveillance and voyeurism are addressed.

Photographer, Arne Svenson, uses photos, taken with a telephoto lens, of residents of an apartment block, whose interior is visible from the street as subjects of his latest series 'The Neighbours'.



Figure 4: Arne Svenson 'The Neighbours'

Michel Auder's film 'Untitled' uses video to address similar issues of privacy boundaries, voyeurism and a surveillance society.



Figure 5: Still from 'Untitled' Michael Auder

<http://www.artnews.com/2014/09/09/privacy-and-surveillance-art/>

Bruce Nauman used infrared video to create his installations entitled 'Mapping the Studio 1 and 2'.



Figure 6: Still from 'Mapping the Studio', Bruce Nauman

Panopticism

Whilst undertaking the 'Interactive Media in Society' module, delivered by Colm Walsh last semester, we looked at the concept of panopticism as described by philosopher Jeremy Bentham and social theorist Michel Foucault. The Panopticon is a form of prison designed by Bentham. Circular in structure, with a guard tower in the centre, the Panopticon is designed for the purpose of maintaining power over its prisoners by inducing the feeling of constantly being watched whilst being unable to see the watcher.



Figure 7: Panopticon

Theories associated with the concept of panopticism are used when we are discussing surveillance and the notion of the 'surveillance society' we live in nowadays. Sociologist David Lyon refers to the Panopticon when he is analysing modern functions of surveillance in today's society. In his book 'Theorizing Surveillance', he refers to the Panopticon when he talks about the notions of 'watching' and 'being watched' being central to regulation and governance and while not a physical architecture (prison of stone), the Panopticon still functions as an ideal, a metaphor and a set of practices.

The implication here is that although the Panopticon is not a physical building that society itself is cooperating in the creation of a 'panoptic society' through the use of surveillance and mass media.

Would it be feasible to create an installation that emulates the structure and shape of a Panopticon? Surrounding the spectator in a ring of screens depicting scenes from everyday life, they become a voyeur, a prison guard, a watcher and an unsuspecting collaborator of a panoptic system. Can this panoptic system

then be used as an instrument for the creation of sounds or music? This idea could be developed further once approval has been granted.

References

Sonification.de, (2015). *sonification.de » definition*. [online] Available at: <http://sonification.de/son/definition> [Accessed 23 Dec. 2015].

Filimowicz.com, (2015). *Video Sonification*. [online] Available at: <http://www.filimowicz.com/pjim/> [Accessed 23 Dec. 2015].