Red-Tratos. Visual Art and Sound Art for the Web

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Abstract. "RED-TRATOS" is a work made for the web and is hosted by the CVC (Cervantes Virtual Center) belonging to the Cervantes Institute, an institution dependent on the Spanish Government. RED-TRATOS was designed as a mix of visual poetry and as Sound Art. The central part is dedicated to Cervantes and has audio files attached to the visual poem and plays with the name of Cervantes and with phonemes and syllables derived from his name.The work was a pioneer in the field of interactive sound art and visual art and was a key piece in the combination of both worlds for the net (net art).This paper will explain how the project was developed with information on the technology used in the digital signal process as well as the software needed to carry out the work. The main audio application used for audio was Csound, as well VRML, CORTONA, and Softimage for the visual aspects of the work.

Keywords: shynthesis, random distribution, net art, sampling,..

1   Introduction

Red-tratos is a visual and sound work made with visual poems by Eduardo Scala, about authors from the world of universal culture of different nationalities and from different periods of time.

The central part is dedicated to Cervantes, and has several visual poems made by Scala about the author of Don Quixote.

Within this section dedicated to Miguel de Cervantes, there is a hypermedia work, made with poems, and with music composed, recorded and made by the author of this paper.

The work has had the collaboration of Miguel Martin who has made the technical part derived from the completion of the work for placement in the network.

Red-tratos is immersed in the website of the Cervantes CVC Virtual Center, for its vision and listening throughout the world network through the World Wide Web.

The two authors have extensive experience in visual arts and sound art and their works have been presented at international institutions around the world.

2   Music, Sound, Poetry

This central part dedicated to Cervantes has a sound attached to the visual poem and plays with the name of Cervantes and with phonemes and syllables from its name. The piece is divided in three parts.

The musical part operates as an hypermedia exposition and has 3 parts in which visual poetry and sound art are mixed:

- Cube. Cervantesmirror
- Cervantesphera
- Finicio

2.1 "Cube. Cervantesmirror"

This section called "Cervantesmirror", "Cube", consists of a new verbal game where the signifier provides several multidirectional variations of the name of Cervantes, located on the six faces of a cube in motion.

This movement plays with aspects in 3D, and has interactive possibilities: the music includes new elements that change with the movement of the mouse.

2.2 "Cervantesfera"

The central part is the fundamental sound part in this work. This section has three parts:

- Black Tone on White,
- White Time on Black, and
- Gray Folia

2.2.1. Black tone on white

The first part of "Cervantesfera" is linear and the music follows the visual exposition of the poem.

Figure 1 is an example of this first movement of Cervantes sphere.

Fig. 1. Examples of the section Cervantes sphere.

2.2.2. White time on black,

It constitutes the second part of "Cervanstesfera"and introduces visual aspects in 3D, and the cube and sphere form appear.

   Figure 2 is an example of the visual part of Cervantesfera's second movement.

Fig. 2. Example of the section Cervantes sphere

2.2.3. "Gray Folia",

The third part of the movements of this musical work, "Gray Folía" is an invitation to walk through the "RED-TRATO" and allows an internment in the most hidden angles of the fascinating typography that composes the picture.

It is an interactive game that has visual aspects in 3D and musical aspects that follow the movement of the viewer depending on the movement of the cursor on the computer screen.

   In this third part, the name of Cervantes is written with fonts of the same historical period of the author of Don Quixote: Paull Renner. The sound files change according to the movement of the text and the place where the viewer places the computer mouse

   The computer has several sensors on the computer screen allowing the user, to move between syllables, phrases, and even enter inside the fonts with which the name of Cervantes is written.
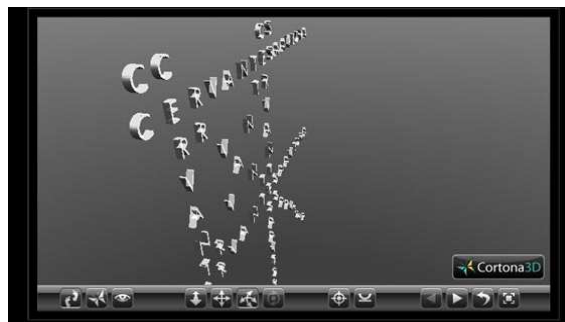
   Figure 3 is an example of Gray Folia.

Fig. 3 Example of section Cervantes sphere.

2.3 "Finicio"."A – Z"

The sound part ends with a section called Finicio. A-Z

It is a metaphor for the beginning and the ending, that allows a kind of timeless meditation.

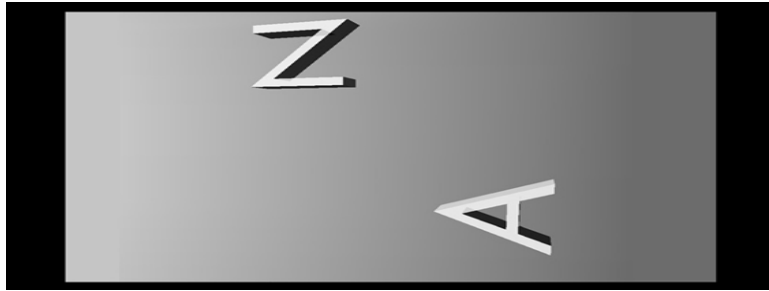Figure 4 is an instantaneous snapshot of this section..

Fig.4 Example of the section FINIZIO

3   Realization

The technical part of this work can be addressed as visual art, sound art, and Interactivity.

3.1   Visual Art

The visual part has been made with Photoshop, Maya, 3d MAX, Softimage Autodesk.

This type of software has allowed the visual process of static image and it gives the possibility of animation and movement in different sections of this work.

3.2   Sound Art

The audio part of this web page, has had several phases that have consisted in Recording, Edition, Sound synthesis.
pure sine waves, filtered white noise,Synthesized guitar and recorded files are processed using DSP and subsequently mixed and compressed for distribution on the network.

3.3   Interactivity section. Gray Folia.

The last part of Cervantesfera, Gray Folia, has been made with a special program for Virtual Reality, called VR Cortona.

VR Cortona has a free viewer, which must be loaded on the computer, to be able to make use of all the possibilities that this Folia offers Virtual Reality with Screen Sensors.

4   Csound

RED-TRATOS uses Csound as the only tool for the synthesis and DSP of the audio part in this piece.
The piece is based on two techiniques Recording and fragmentation, and synthesis.

4.1   Recording and Reproduction of Audio Files

Red-tratos uses a fragmentation of sound and image. This process is generated for a sentence of cutting phrases and words into phonemes and syllables.
  The voice sound came from a recording of the voice of Eduardo Scala reading the poems by Miguel de Cervantes.
   These audio sources are processed as sampling sources, by cutting and distributing the samples into the piece.

```
a1, a2 bbcuts  asource1, asource2, ibps, isubdiv,
        ibarlength, iphrasebars, \
    [, istutterspeed] [, istutterchance] [, ienvchoice]
```

  After the cutting and fragmentation of sonorities, the sonority is produced by means of stochastic probabilities, (Gauss, …)

```
a1 randh  xamp, xcps [, iseed] [, iuse31]
a1 gauss 1
```

the sound recorded is distributed with somne techniques of cut and shuffle with forms to play forward backward

```
a1 Soundin "speech1.aif", 0
a1 Loscil
```

the reading process came from the reading from a table

```
a1 tableshuffle ktablenum
a2 tableshufflei itablenum

 giBuffer ftgen  0, 0, 2^17, 7, 0; table for audio data
storage
```

4.2   Shynthesis of Sound Files

The synthesis process try to imitate a possible sonority derived from the time in which Cervantes lived.
  The basic material is derived from recorded voice, sinusoidal sound, guitar like synthesis, and percusive sound from white noise source.
  The main ideas came from pure sinusoidal sound with some modulation.

The guitar that remembers the vihuela sonority from the renaissance period in the Spanish tradition of instrumental music. The synthesis came from a mix of Karplus Stong Algoritm and Waveguide shinthesis.

Karplus strong
```
    ares pluck kamp, kcps, icps, ifn, imeth [, iparm1] [,
iparm2]
```

The percussion sonority produced with noise source with some filtering for change the timbre properties of the sound, to imitate different instuments.

4.3   Interactivity

There are also a part of the piece that have an important interactivity property.
    The user can move the mouse and listen and see different parts of audio file.
    The image is designed as a 3D picture and the user can move around and inside the image in order to have the illusion of a travel inside the visual poem.
    In the last section, the interactivity produced with cortona is associated with csound. The user can control, with the mouse, the space (stereo) distribution of the samples and the production of the sound into different sound planes. To have a similarity with filmic planes (plane, general, …)
```
    a1, a2  space asig, ifn, ktime, kreverbsend, kx, ky
    ktime
    line  0, 5, 5
    a1, a2  space asig, 1, ktime, ...
```

5   Conclusion

The work presented in this article involved an effort of collaboration between a plastic artist, father of the original idea, together with a composer and a technical team for the realization and representation of images and sound in a hypermedia and interactive page.
    Its place of presentation, and of vision and listening is a primordial and a preferential form, in a browser for the web. This work has been hosted in the CVC network.
This fact, period of time, together with a high number of visitors, gives validity and relevance to these RED-TRATOS.
    The work could be seen and represented in a real space, such as a space belonging to a museum, art gallery, or physical space where a technologically complex installation such as RED-TRATOS is allowed.
    A problem related to this type of presentation, is associated with the inexorable passage of time and possible obsolescence of technology, so it is necessary to update software and hardware everytime this possibility becomes a reality.
    As in other disciplines, the passage of time has given a validity to this presentation that has gained over the years. In the same way, this passing of time offers an extra patina to the work.

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