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SOFTWARE AS AN BASIC – MUSIC PLATFORM

Abstract

There is not always a clear difference in cognition between whir and noise, mood of music or tone in the era of modern music. In the cognizance of being as individuals there is a problem of visual memory in relation to the sound; for example: clatter of horses or gurgling brook, or sigh that can be interpreted as a beginning of the pain, sex or fatigue, etc. This paper presents a novel approach to using software sources that are active conductors in acceptance of many cognitive skills, and various software programs that play important role in innovative music creation, musical compositions and sound. All music refines and links natural and artificial forms, as per requirement, analogically and digitally, so that modern cognition in the era of IT actually just links cognitive knowledge that we know from before. The connection between software technology and cognition is addressed, and the importance of designing a new program which will help cognition improvement and development.

1. Introduction

We are witnessing fundamental organizational change. Testing arena for creating new sounds has shifted from the aesthetic sense is a non-profit, self-organized group of independent, alternative art network in the world, that is enjoying the support of a major public computer music laboratory. In this way introduction to word-sound-music is created as a logo from Monteverdi to music samples and sound design in the context of skill comprehension. Two trends are characterized as following: one is called "world model" after the modern analog energy theory and second one comes from the novel techniques of sound generation and synthesis.

2. Music Related to Software

This paper describes the cognition involved and developed when in our case students use software, a program that is a major microcomputer application and a cognitively intense task. The task is analyzed in terms of a new student task/assignment.

Two topics offered for the terms of reference are: visualization of music and sonification of images.

The goal of visualization is to generate pictures or music images based on input music signal. There are currently wide variety of visualization technologies in use that are useful music creation software and tools which range from Windows Media Player tools for visualization of sound signal, Spectogram software for audio visualization and TimbreGram which gives us novel graphical representation for sound.

On the other hand, Image Sonification is generating a sound based on the data contained in the image. Sonification can be applied in many areas especially as an alternative to visual perception - in areas of new user interfaces for the blind and visually impaired people, to visual and algorithmic music composing.

3. Implementation in Student Assignment

The motivation for both approaches can be drawn from associations that exist between music and visual forms. Examples of using visual terms to describe sonorously occurrence and vice versa is present in many cultures.

In both cases it is necessary to write a program in MATLAB whose input is in a Wav file or image in one of the supported formats (.jpg, .tiff, png), and the output should be an image, that is, generated sound signal based on the input media.

Some ideas that might help in different approaches and problem solving can be found in the following papers and websites:

Timbregram described:
• http://www.ee.columbia.edu/ ~ dpwe/papers/TzanC00-airtools.pdf
• http://flyingpudding.com/projects/viz_music/

Some examples of:
• http://www.visualcomplexity.com/vc/blog/?p=811
• http://www.seeingwithsound.com/im2sound.htm
http://www.seeingwithsound.com/voicebme.html
• http://www.ohmpie.com/imageEncode
• http://cnx.org/content/col10319/1.2/

The basic functionality of the program should include the following:
• Input media upload: sound or images
• Analysis of input signal
• Adequate representation in other media types
• Storing / viewing the resulting media type

It is not necessary to generate the output in real time, it is possible to load input file, analyze, generate new content and save results in a file.

Anyhow, visualizations that have a time component (Media Player style) would be good to synchronize with audio.

Resolutions in which the pixel values are mapped linearly to the value of samples and vice versa will not carry a significant number of points. It is necessary to perform an analysis of input signal and to generate an output signal, based on the results of this analysis. The aim of this approach is to find some characteristics of the input signal that can be replicated in other media and by human observer, that is, to cause the similar experience to the listeners.

The project does not have to have a graphical interface, and its inclusion does not automatically increase the number of points. However, the graphical interface can be a part of approach to the problem, i.e. to allow some sort of manipulation of the media, in which case will carry points.

4. Spectrogram MATLAB tiff and AVI

As mentioned above, Spectogram is a visual representation or graphic image of sound. It displays the amplitude and frequency components of the signal over time, time and frequency with a third dimension – amplitude being displayed with variable brightness in 2D and both brightness and light in 3D. This allows us to see when sound happens, what harmonies are present and how strong they are. The results can then be displayed visually – from bright to dark colors. White representing no energy, black representing lots of energy. Brighter colors are representing louder sounds and darker colors are representing quiet sounds.
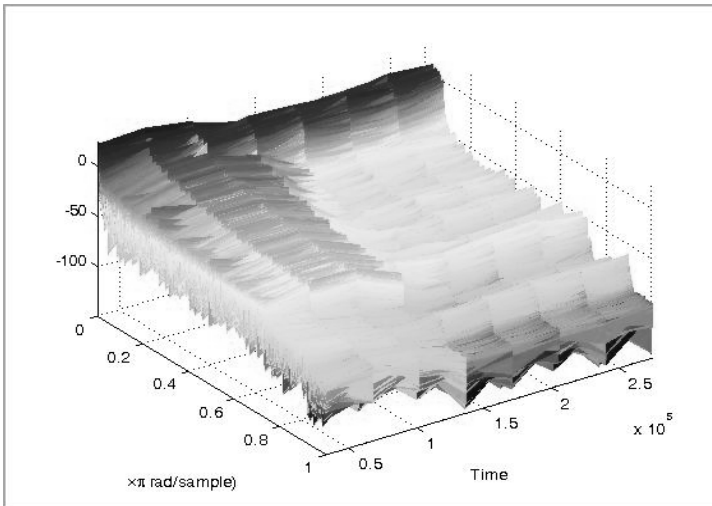
Music composed by Robert Farkash 2013
https://soundcloud.com/robertfarkashmusic
http://www.deezer.com/en/album/666448
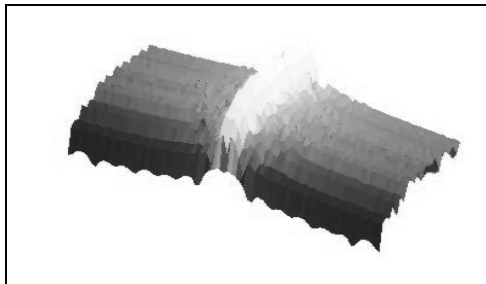
Figure 1. Spectrogram from MATLAB of mp3 "dmin Cello"
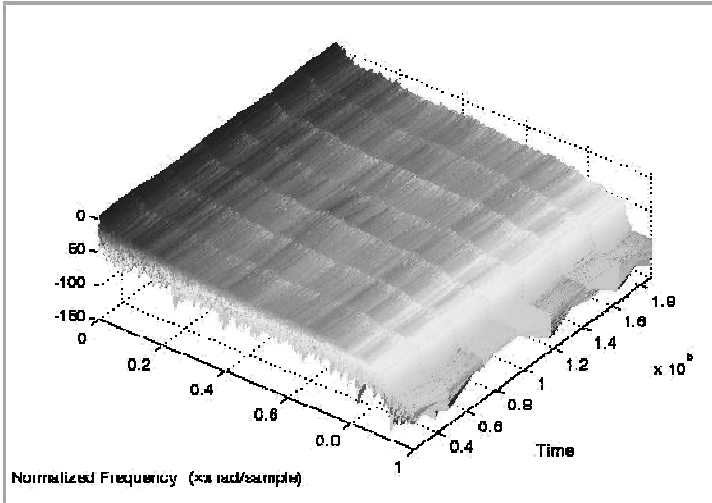
Figure 2. Spectrogram from MATLAB of mp3 "Imagine"

Figure 3. Spectrogram from MATLAB of mp3" Nowhere"

Logo of the CogInfoCom conference series

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5. Soundation

Related to above mentioned, Soundation is presented as an online loop-music-sound-maker, as following:

Soundation Studio is a powerful tool for creating music online

– the Soundation Studio sequencer contain many of the features otherwise available in expensive desktop applications

– Sequencer, Over 400 Royalty free loops, 3 virtual Synthesizers, Simple, Mono, Super Saw, Virtual Drum Machine and White Noise Instrument SAM-1 sample player with 5 instruments – Sample.

6. Ableton Live 9 - midi

Ableton Live is the most popular computer tool for music production, intended for those who want to record, compose, produce and perform live music. Today, there are about 1,700.000 customers worldwide, and some of the big names such as Karl Bartos (Kraftwerk)-University of Berlin, Björk,

Yoko Ono can be counted among them. Also, some important institutions of higher education such as the University of Berlin, Berclee College, University of London, etc. are using this powerful music production software and digital audio workstation.
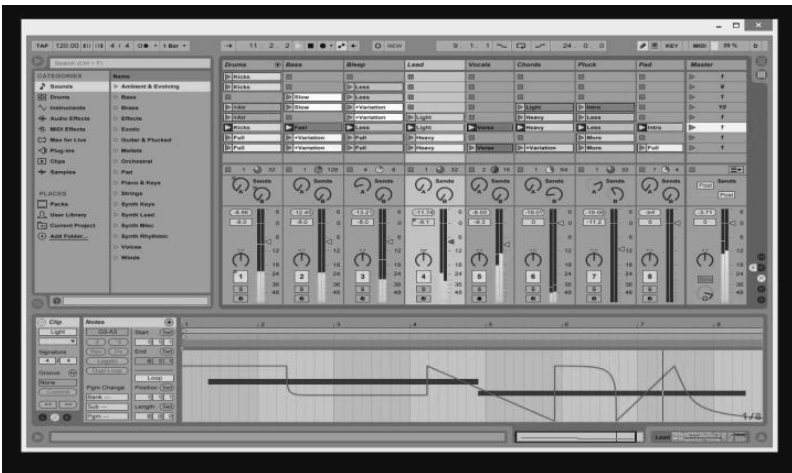

Figure 4. Ableton Live 9 Suite

7. PUSH Midi Controler

PUSH Midi controler is the music making instrument that can be used to control melody and harmony.

The voice can be used as the new keyboard: sing, beatbox, tap a rhythm on your desk, or play any solo instrument to capture your musical ideas as they come. Then use the Melody-or Drums-to-MIDI feature to turn your recordings into MIDI clips that can be edited and reused with any sound.

http://www.youtube.com/watch?v=4uznGoqqUS4

Figure 5. PUSH midi controller

8. Nuendo Steinberg Cubase 6

Nuendo Steinberg Cubase is versatile and essential tool/software used for recording, arranging and editing. Using Cubase we can also edit MIDI files (mantioned above).

During the presentation compositions: "Sofa", "Video Game" and "Live-Citer Song" by Robert Farkash will be presented.
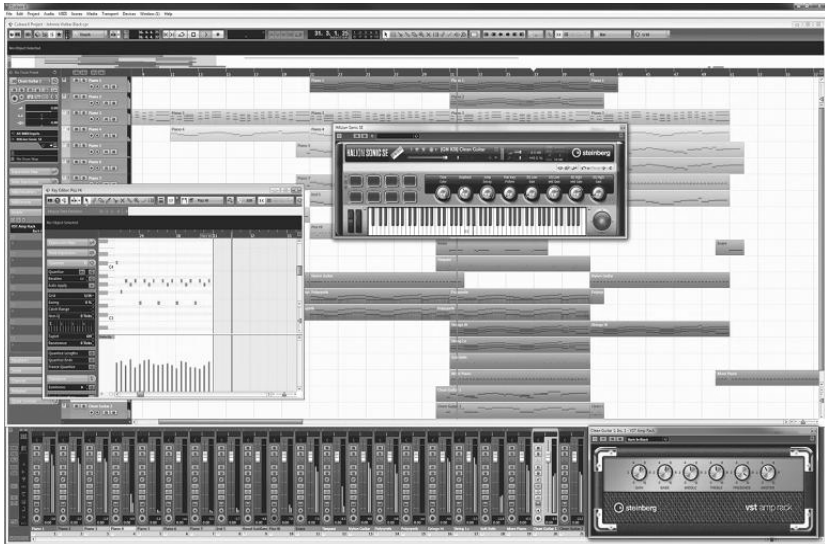
Figure 6. Steinberg Cubase – Nuendo

9. Finale

Finale is a music writer, a software that allows flexibility to ralize any music you can imagine and makes it easy to put any music to a printed page. It simplifies music creation from automatically transpoting appropriate instruments to instantly creating dinamically linked parts. In addition to printing high quality sheet music, finale can export wide variety of files from mp3 audio files to pdf and other graphic files.

Figure below represents composition "Fiola" by Robert Farkash which will be presented at the end of presentation.

Figure 7. Music writer

10. Conclusion

The paper presented a novel approach to using essential methods including its implementation in student assignment that include various software's and software sources that play important role in understanding of music informatics.

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