AUSSCHREIBUNG

07.02.2018

Title:

Proof of Concept for a 3D Mix Visualization Audio Plugin

Description:

To program an audio plugin compatible with Apple's Logic or GarageBand (VST or AU) that takes multiple stereo audio signals as input and outputs a three-dimensional graphic representation of all the signals at once. The 3 dimensions are frequency spectrum, amplitude and stereo spread. The different signals are separated by color.

Background and Application:

The mixing process is the most important step in digital music production from the engineering point of view. Many mixing plugins and tools exist in today's home studio platforms, which help the mixing engineer balance the mix correctly, but none of them present a true visual representation of what the mixer is actually hearing. As a result the mixing process remains a difficult, an almost "blind" task that only experienced mixers with a developed sense of ear can master.

Required Knowledge:

- C++ programming
- Knowledge of digital signal processing, especially Fast Fourier Transformations
- Affinity to music and interest in digital music production
- Experience with the plugin standards VST, VST3, AU, AAX is an advantage

Organization:

The core idea is very scalable. The goal of the initial Ausschreibung is to finish a Proof of Concept, meaning at least 3 stereo signals can be displayed in 3D in a way that the user can easily recognize the different audio sources visually. Changing parameters of the original audio signals, such as equalization, volume and panning results in a visible change in the 3D visualization. The scope of this initial POC could be turned into a very cool Bachelor or Master's Thesis. Note: most of the DSP involved is already existing as open source code.

If the concept is proven to work, the idea can then be expanded to multiple input stereo signals, the efficacy of the visualization and efficiency of the plugin can be tweaked and the overall quality improved. The plugin can be standardized to work with all DAWs. The applicant can then decide if he/she wishes to partner up with me to bring the product to market. Note: A provisional US patent for the herein discussed methods has already been granted.

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