

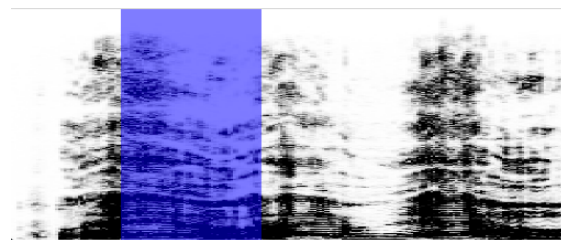
Loops explores the idea of manipulated repetition, using a vibraphone, a computer and the Max/MSP software. The focus of this piece is the use of live recorded and manipulated sound. About 10% of what the audience hears are prerecorded samples and the rest is live recorded and altered in real time.

Anything Worthwhile is Perishable (AWP) begins with a prerecorded Mbira introduction and the material on the vibraphone is based on the B mixolydian scale used on this Mbira. The Mbira has a “buzzy” sound caused by sympathetic vibrations of bottle caps on the body of the instrument. To blend the live and prerecorded sounds the composer uses preparations on the vibraphone bars. Coins, paperclips and foil packets filled with grains are affixed to specific bars mimicking the buzzing of the Mbira.

The electronics in **AWP** include multiple delays which repeat the material played by the performer at randomized intervals. Four different delays are used and each has a randomized filter placed upon it. The filters bring out different harmonics of the delayed material. These “echoes” are also played through randomized panners. The panners determine where the sounds comes from by shifting between the left and right speakers. The Mbira, live vibraphone and delayed vibraphone are all played back using reverb. This makes the sound longer as if played in a large, resonant space. Also, by placing the live sound and computer sound into the same reverb it makes them sound more cohesive and as if they live in the same sound world.

Eventually all of this material is fed into a Phase Vocoder which can manipulate the playback speed without altering the pitch. The Phase Vocoder is set to stretch and blur the material at large randomized intervals. It also randomly chooses where to start in the live recorded file. It records and plays back at variable speeds, with variable playback heads, and denoising, without changing pitch. Altering the playback head size creates a smear that sounds a bit like time stretching (I call this blur). Basically it plays all of the notes that are happening within a selected time period. For example it may start by playing the first 2 seconds of a recording simultaneously and move this block forward.

Normal Playback head



“Blurred” Playback head

I consistently use randomization in my electronic compositions because it allows the performer something to interact with. The randomization is created by supplying the computer with a number range to choose from. For example, the playback head width and the speed at which the playback head moves are randomly selected from a range chosen by the composer. The majority of this movement is improvised and the randomized effects create a loop in which interaction can be achieved. The performer plays something, the computer gives a randomized response using this material, the performer reacts to this response and the

computer uses this new material to create a new random response and the interactive cycle continues.

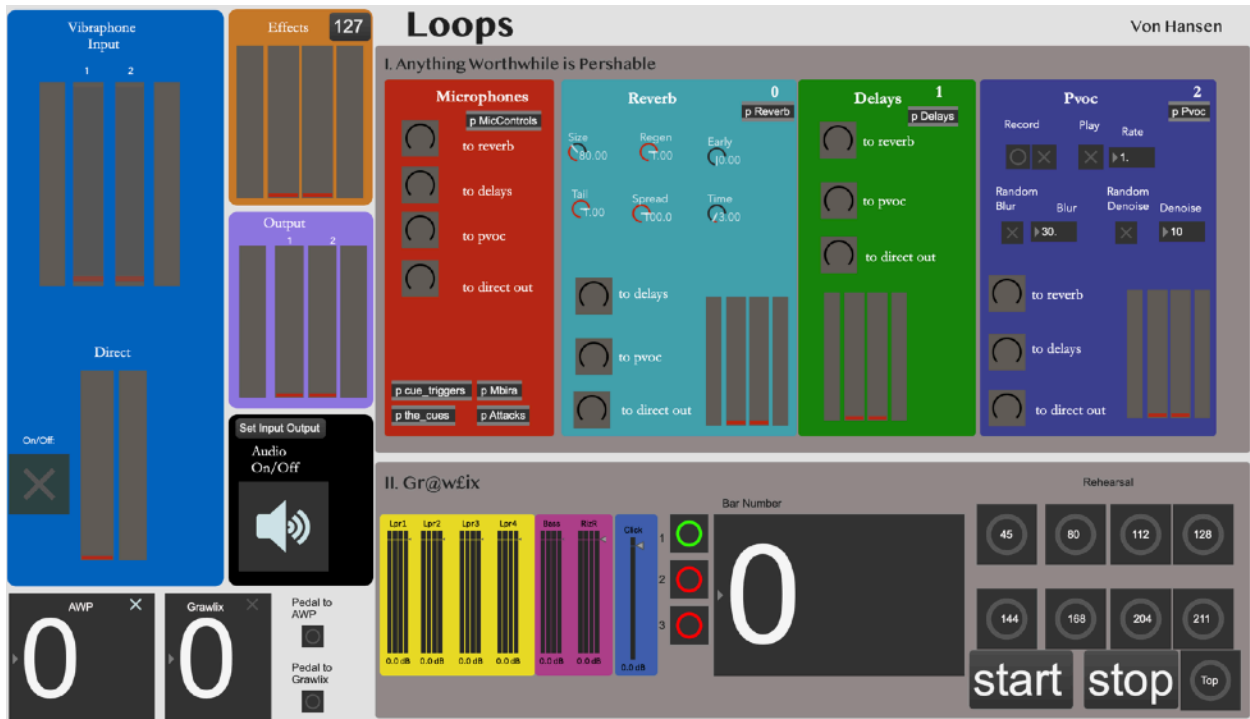
In the middle of the piece the performer begins to play prewritten material and more reverb is added to the live vibraphone to bring out the preparations. As the prewritten material progresses the performer begins to press a bluetooth pedal which triggers prerecorded samples to color the vibraphone part. These prerecorded samples are recordings of the vibraphone with multiple types of preparations. By using a pedal to trigger the samples the performer is able to be expressive with tempo and still sound synchronized with the computer. As the movement moves to the end the Phase Vocoder effect is taken away and the delays return before they too are taken away and only the live vibraphone and prerecorded Mbira remain.

Gr@wfix uses looping in a similar way that live musicians use a looping pedal. This allows the performer to play something, record it, play it back and add new material over the top. This can happen endlessly to create full textured grooves that cannot be achieved by a single person with only live instruments. Rather than using a looping pedal I have preprogrammed the computer to loop at the correct time. This allows the performer to focus on playing the music rather than the coordination of pressing the pedal at exactly the right time. Several different loops are created, each at different lengths and number of layers.

Outside of the live looping several effects are placed upon the live vibraphone sound. The first effect is dropping the live sound by an octave and placing heavy distortion on the sound. Next, a multi-tap delay is used. This takes the live sound and plays multiple rhythmically delayed repetitions. This multi-tap delay is used several times in different durations. Sometimes this creates a short rhythmic burst and other times several measures are stacked up to create a wall of sound.

Rather than focussing on improvisation and randomization this movement is concerned with very precise synchronization in order to create rhythmically accurate stacked loops. The performer is provided with a click track in order to stay synchronized with the looping software.

The two highly contrasting movements give the performer the chance to interact with the computer in various different ways.



User Interface

Loops can be purchased on the composer's website at <https://vonhansenmusic.com/compositions>