4 computer music studies

1] resynthesis and difference tones

A resynthesis of a Bach chorale using difference tones.

This idea was originally conceived in correspondence with Scott Cazan.

2] distortion and control

The amplification of the ambient noise of a room from 0 to 2000 times the original amplitude exponentially with the output clipped between 0 and 1.

3] gating and spectral granulation

A crossfade between two signals with the following simple rule: pass the louder signal. Spectral granulation (the granulation of individual bins of a fast Fourier transform) can be applied to the signal that fades out.

This idea has been / can be performed under the title *fade and aviary*.

4] delays and modular arithmetic

A virtual circuit with simple modular arithmetic constructed in real-time by connecting nodes to each other with delay lines. At any time, any node can also be output to the system or fed simple input signals such as impulses and sine tones. If multiple sources are connected to a node, the signal is summed. At each stage of the circuit, the signal can undergo a change in bit-depth and wrap around a given modulo based on the bit-depth at that stage. That is, the circuit does not continuously sum and explode as with traditional feedback networks, each node wraps ands stays within unity.

This idea has been / can be performed under the title *delayGraph pre-Alpha* with a projection of a custom graphical user interface used to construct and visually represent the circuit.

In performance, each explanation can be read prior to the sounding of its corresponding piece.

At the time of this version of the score (01/24/2017), the computer code for the studies is available at:

http://www.github.com/mwinter80/4_computer_music_studies

and a recording including all the studies is available at:

http://www.soundcloud.com/mwinter80/4_computer_music_studies

-michael winter (lima, pe; 2017)