

## Interactive Sonic Arts

### Etude 03

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With this etude, I went into the process with less of a clear aesthetic goal than the previous two etudes. Instead, I tried to setup a simple system, play with it, and let it guide and shape the etude. While I like the droney space in which it ended up, it also feels to me more like an introduction to a piece that could be extended and expanded on much further.

Following my previous patterns of work, I began by MC-ifying the Sakonda granular engine, creating two instances of the MC-ified engine. These two instances perform synchronous granular synthesis (though their MC natures allow them to diverge from what I would expect out of a synchronous engine quite significantly). I also imported a copy of the MC granular engine from the MC examples, which allows for asynchronous, spaced apart grains.

The MC Sakonda engines have per grain control of all the standard granular parameters, and I also implemented per grain controls for filtering, panning, and reverb. I really like the results possible from spreading apart grain positions and having different grain sizes per channel. Automating the filters and panning also provided really nice results, and I can easily imagine incorporating the MC-ified engine in future systems.

In terms of the actual composition, I use one Sakonda engine to provide a shimmering background constructed from the sound of breaking glass. The second Sakonda engine performs a more harmonic role using small grain sizes and individual pitch control to each channel. With the envelope I used, I found grains less than ~30ms long started to provide clear tonal content - while slowly scrubbing through the sample, this results in a range of tones that can be nice and growly in the low end, to sometimes sounding like builds of midrange feedback - helped along by the multichannel panning and reverb, as well. In my performance systems I don't usually end up in this kind of small grain, tonal territory, as it's difficult to tune to other performers (or at least would be in the systems that I have built), so it was interesting to just listen to the results that come from this control space.

Finally, I used some onset detection to provide some structuring to the piece - after every  $n$  onsets are detected in the background shimmer stream, the shimmer parameters are randomized and after  $3n$  onsets, the tonal layer fades in. Onsets are also detected in the tonal layer and used to trigger bursts from the asynchronous engine. I would like to continue exploring the use of machine listening techniques, ideally to provide potentially more radical structural and aesthetic changes to a piece.