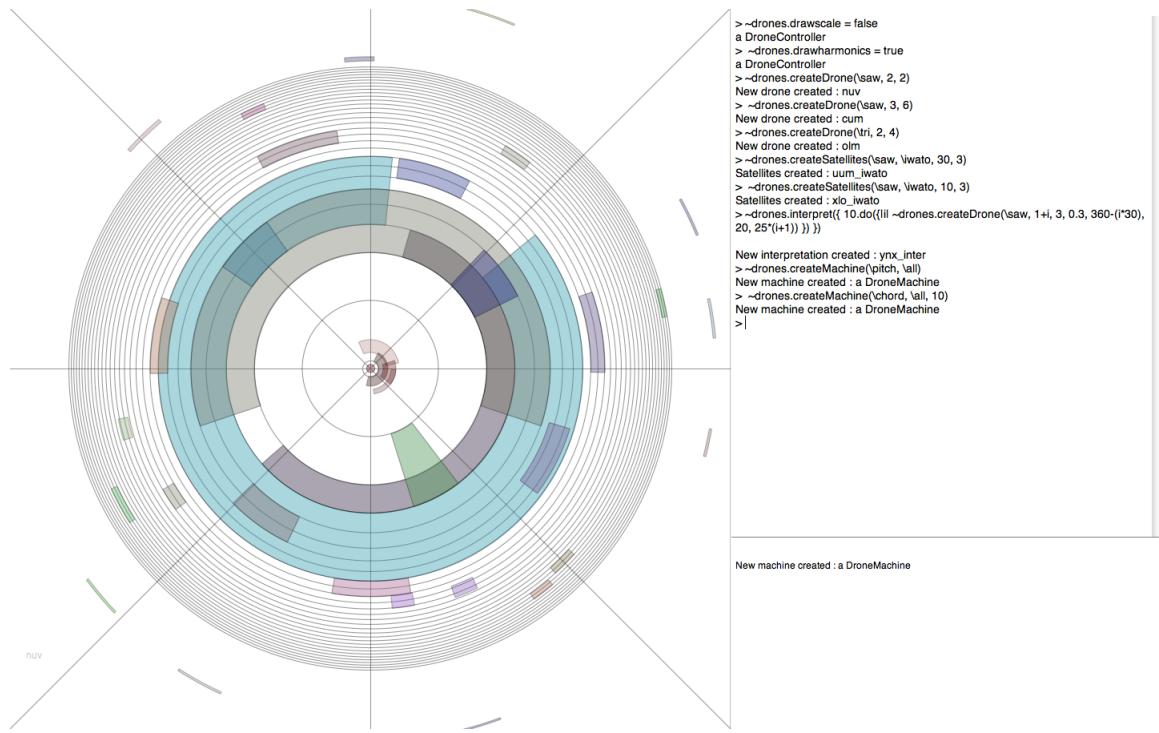


The Threnoscope: Live Coding the Harmonic Spectra

Thor Magnusson – University of Sussex

The Threnoscope is an audiovisual compositional system focussing on a few key elements: drones, microtonality and spatial sound. The piece aims to remove linear time from the music by emphasising stasis or circularity. Through visual representations of harmonic relationships, tuning systems and drone states, and multichannel audio, the system affords specific compositional focus that encourages the performer to work with spatial sound and descriptions of harmonic spectra. The Threnoscope serves as a representational notation, visualising harmonic relationships between drones. The system has a strong capacity for microtonal composition by implementing support for the Huygens-Fokker Scala format, accompanying over 4000 microtonal scales and tunings.

The Threnoscope can exist as playback system, a sound installation, and a live coding performance instrument. This proposal involves using the Threnoscope as an instrument where the performer will live code the system. The performance will not simply involve live coding, but live mapping of controllers, interaction through the graphical user interface, and creating virtual agents that engage with the performance process.



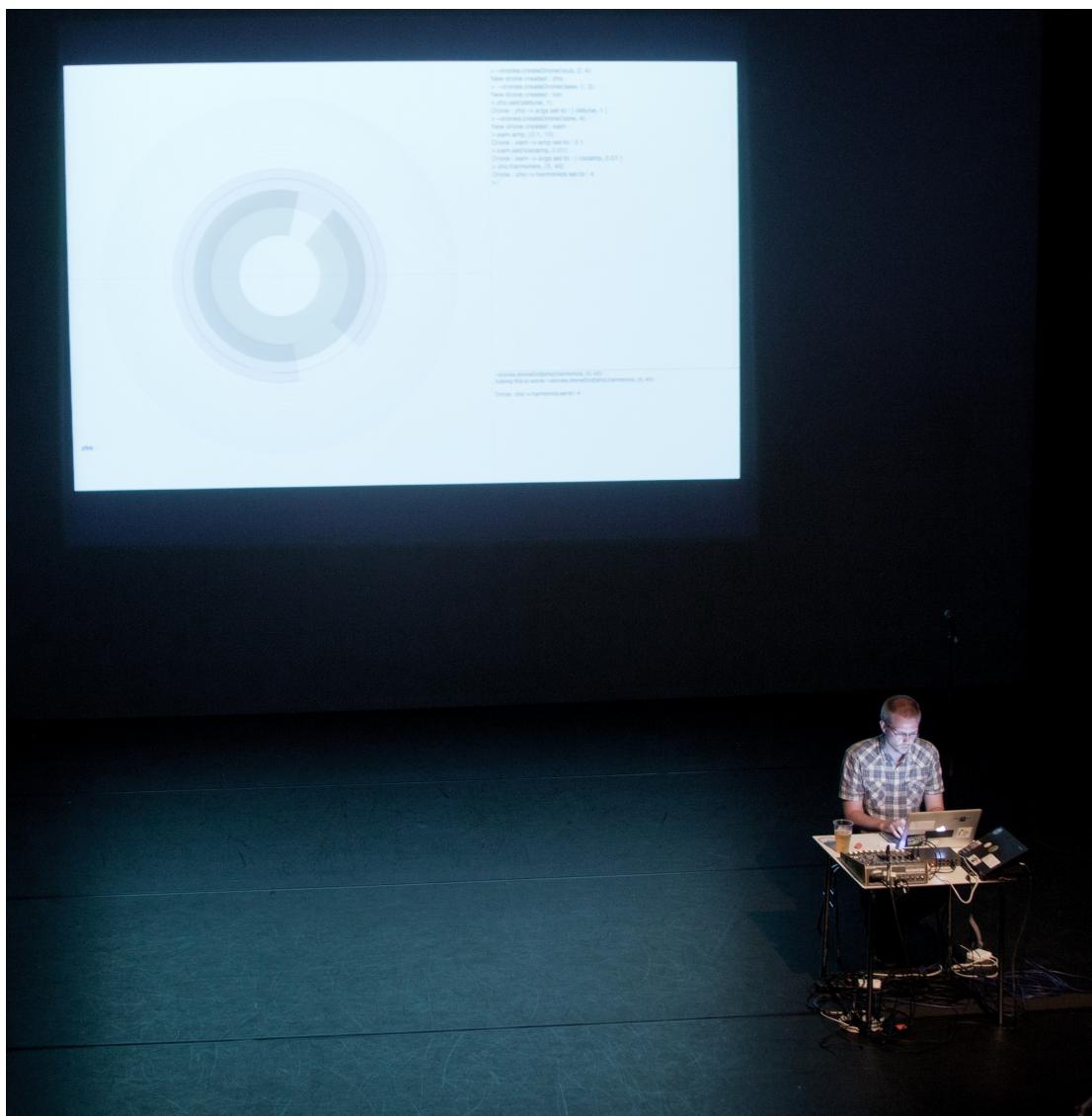
In this performance at Live Interfaces, the aim is to collaborate with another performer, ideally another LI attendee, thus including other instruments as well. The drone-like nature of the Threnoscope lends itself particularly well to improvisation with other instrumentalists, and I have engaged in such collaborations, last time at the NIME conference in London:

<http://nime2014.sched.org/event/cab573a5aa9e9ff144baeb904d47e5b8>

The performance setup is the following: A table on the stage for the performer. The desktop of the live coder's laptop is projected on the wall. A mini-jack cable from the laptop serves the sound (it would be ideal if there was an 8 channel sound system, but stereo would suffice). Depending upon collaborator, another channel on the mixer will be required as well.

The Threnoscope is a new compositional system that has only been used in performances seven times: at Bristol's Arnolfini; AudRey studio, London; MuseumsQuartier Vienna; Cafe Oto, London; Live Coding Symposium, Dagstuhl; Seeing Sound Symposium, Bath Spa University; and NIME 2014 in Goldsmiths, London.

The performance might suit well in as an early night bar performance, but ideally performed in a traditional concert environment.



A description of the system can be found here:
http://www.ixi-audio.net/thor/Magnusson_Live2013.pdf
and here:
http://www.ixi-audio.net/thor/Magnusson_NIME2014.pdf

And in the following two videos I demonstrate

a) Some of the system's functionality:

<http://vimeo.com/63335988>

b) A piece written for the system

<http://vimeo.com/75380587>

List of equipment required for the performance:

- A video projector
- A two, four or eight channel speaker system
- A table and a chair
- The collaborator will probably require a mono-channel on the mixer

Short bio:

Thor Magnusson's background in philosophy and electronic music informs prolific work in performance, research and teaching. His work focuses on the impact digital technologies have on musical creativity and practice, explored through software development, composition and performance. Thor's research is underpinned by the philosophy of technology and cognitive science, exploring issues of embodiment and compositional constraints in digital musical systems. He is the co-founder of ixi audio (www.ixi-audio.net), and has developed audio software, systems of generative music composition, written computer music tutorials and created two musical live coding environments. Thor Magnusson lectures in Music and convenes the Music Technology programme at the University of Sussex.