

Machine Enhanced Improvisation

West Road Concert Hall, Cambridge, Feb 21st, 2005

DrumTrack	12-15 mins	Dave Ellis, drums
Free Jazz Simulation	5-10 mins	Ian Cross, guitar
Sat at Sitar	20 mins	Nikki Moran, sitar

Improvisation Systems Devised By Nick Collins

Interval (15 mins)

klipp av	30-40 mins	Fredrik Olofsson, visuals Nick Collins, audio
-----------------	------------	--

The Program Notes

Drum Track

This algorithmic monster is a duet between a human and an artificial drummer where neither is guaranteed to co-operate. A tracking system attempts to establish the tempo and beat of the human performer from two microphones on an acoustic drum kit, allowing the computer to accompany the human, if it so chooses. The improvisation system is a generative construct- it varies with every performance and its mathematical parameter space is larger than the number of atoms in the observable universe. But I hope you'll get an idea of the sort of output it generates in the time you hear it; a time which is unknown before the show since all fine details of the form and sound synthesis are constructed during the running of the piece.

Free Jazz Simulation

One human and four artificial performers interact. The computer agents have onset and pitch detectors for their ears, and listen to every other band member. Their behaviour is controlled by such parameters as 'sloppiness', 'reaction time', and 'insularity', which vary during the performance on a whim. This dynamic network provides a simulation of a free jazz ensemble.

Sat at Sitar

In this machine augmented improvisation, the sitarist is followed by pitch, onset and event analysis tracking software. All computer generated audio is created in real-time and is sensitive to the soloists' sound world, and the desired mood is one of subtle intimacy and support for the human performer. An improvisational frame is provided separating the alap (free prelude), gat (theme) and jhala (finale) into a number of scenes. Each of the three stages of the improvisation commences with the sitarist solo; each ends with the computer solo, manipulating material collected during earlier scenes in that section. The performer is given feedback on their location in this structure, with

certain prearranged timbral directions, and data on their pitch contour and rhythms which may inspire them to imitate themselves seen through the distortion of the tracking errors. Very occasionally the computer will deliberately misinform or misdirect the soloist, much like the joking of a benevolent uncle.

The pilu (chromatic) rag has been selected for this performance and features a strong opposition of flattened and natural third.

klipp av

klipp av is Swedish for 'cut apart', and the adopted name of an audio-visual laptop duo working within the electronica club scene. Since 2003 they have explored new technologies for the live performance of algorithmic music and visuals, with inter-modal communication. Their two laptops are networked to allow the exchange of control information; one geared to sound and the second to video and computer graphics. Both computers are able to capture current environmental information, the former via microphone, the second by digital video camera. Live algorithms are manipulated on the fly, with multimodal consequences. In particular, they have been experimenting with the visualisation of audio splicing algorithms, audiovisual event capture and audiovisual feedback loops.

The Biographies

Experienced percussionist, **Dave Ellis**, is a regular face on the Cambridge concert platform. He enjoys performing all styles of music from small band jazz to the largest choral symphonies - and everything in between! Dave has studied with Graham Hosker and János Keszéi at the RCM. In spite of a busy concert calendar, Dave is currently studying for a PhD in Semiconductor Physics.

This concert could not have taken place without the efforts of **Ian Cross** to establish the Music Faculty's new Centre for Music and Science, of which he is the director. Ian will play a custom built guitar by Martin Woodhouse.

Nikki Moran began her study of sitar performance in 1998, at City University, London; her interest in North Indian music came about when she got lucky and met the right people at the right time. Nikki now plays a sitar made in Kolkata by Radha Krishna Sharma & Co, because her previous model was eaten by Mumbaiish woodworm.

Fredrik Olofsson (www.fredrikolofsson.com) is an in-demand installation artist in Scandinavia. The demand was too much for him in fact, so he left for Berlin, where he pursues interests in visual and audio art, programming, secret intelligent agents, and cafes. Fredrik is the more important and generally better turned out half of klipp av, an audiovisual splicing duo (www.klippav.org).

Nick Collins has been building algorithmic music systems for eight years, from 1997's Skriabin Simulator and Infinite Techno Machine to this year's Mother Fuga (an eternally running microtonal n-voice fugue generator). Increasingly, he has explored the possibilities for live performance of algorithmic works which are sensitive to human musicianship like the concert pieces on this program. Nick is the more important and generally better turned out half of klipp av, an audiovisual splicing duo (www.klippav.org).