

Presenters' Abstracts:

"Two Thousand + SEVEN", 21st April 2007, SARC, Multimedia Suite

Tim Sayer (The College of St Mark and St John)

"Using Technology to Ride the Reflex/Volitional Continuum in
Improvised Musical Performance"

Abstract

Throughout much of the history of acoustic musical instrument development, mapping the user interface onto functionality has been implicit in the artefact. There has been a direct and seamless relationship between the mode of interaction and the means of sound production. Even when mediated through a mechanical process, such as a piano action, the causal effect of an interaction is temporally and physically very direct. Modern performance contexts provide environments in which highly complex functionality has to be mediated through bespoke interfaces which can be configured to control the causal effect of the performer's musical gesture. In a mediated environment there is of course the potential for multiple mapping stages to exist. The relationship between an interface and technological functionality is normally configurable at both ends, with the calibration and representation being manipulated at the interface end and the grouping of parameters or responsiveness at the other. It is also possible to have environments where the relationship between the performer and the interface is also configurable at the interface, by manipulating semantic or perhaps metaphorical or semiotic meaning. However, the question I am exploring here is, how can man machine interaction be used to bear influence on the performer's internal behavioural mapping by exploring reflex and volition in improvised musical performance?

Drawing on the experiences of performers, composers and systems developers and from the field of cognitive science, this investigation explores how conceptual tools have been utilised to influence human behaviour in a variety of situations. I have drawn the notion of prosthetic mental functioning from the world of extended reality and Rheingold's concept of intelligence amplification. I have also employed Di Scipio's concept of eco-systemic design in framing the performer's relationship with the technology. His vision is not one of denying a performer agency in their relationship with technology, but mediating that agency through the performance environment.

This paper will present this theoretical material in the context of performances undertaken using an experimental computer based performance environment which employs an expanded notion of a performance parameter space to include the responsive and auto-responsive behavioural activity of the performer.

John S Richards (Music, Technology and Innovation Research Centre, De Montfort University, Leicester)

“Loving Latency: the Magical Time Machine”

Abstract

Why does the issue of synchronisation dominate network performance research? As Alvaro Barbosa has commented, ‘real’ synchronicity is impossible, for even at the speed of light the time it would take to send data over a distributed network would produce enough time delay to make ‘real-time’ music making between remote users problematic. Nevertheless, this has not prevented the fascination with attempting to achieve the impossible. The fixation with simulated experiences through digital media and virtual reality has been fuelled by such industries as defence, sex and computer games; and musicians are being caught-up in the wake of these technological developments.

This paper addresses the concept of a network becoming part of an ‘instrument’ and as a unique medium opening up new musical paradigms. Furthermore, inherent latency in a network challenges the musician to re-evaluate tried and tested conceptions of music as a linear time-based art form. There are a number of pieces that have already explored latency creatively: for example, Jesse Gilbert’s *interaXis* and Chris Chafe’s *Ping*. However, even more focused research must be directed toward how the ‘network’ can shape the whole creative process both compositionally and in regards to performance. What lies at the root of the success of network performance environments is how the very music itself is conceived. The philosophy of Henri Bergson points to a way of thinking about time and space that moves beyond the synchronous, linear and vertical arrangement of events. There are many examples too where musicians have sought to regard time in a similar way to Bergson. For example, Morton Feldman’s *Durations* and *Piece for Four Pianos* treat time as a pure and fluid process rather than artificially frozen instants. Such composition and musical thought lends itself to the asynchronous world of a distributed network. It is through exploring ideas of ‘musical’ time that the true potential of network performance environments will be met.

Josephine Dorado (The New School/ZoomLab)

“Oneness: Improvising in a Networked Environment”

Abstract

“...to improvise is to join with the World, or meld with it.” (i)
When performers collaborate and improvise in a virtual space, a “oneness” of space is opened and persists, regardless of the multiple locations of physical performance. Networked performance, in this case defined as an online collaborative performance among physically dispersed participants virtually linked in the space of the internet, in combination with improvisational structures and mapping methodologies, can form a creative virtual space different from, yet as powerful as that experienced in a physical space.

Improvisation, in its simplest definition, is the act of making something up as it is performed, an act of spontaneous creation. One action organically spirals out of another. Each performance is different, and relies upon the performers’ abilities to listen and react spontaneously in the moment. Indeterminacy is the primary element in improvisational performance, and the reliance upon one’s readiness to respond creates a tension that resonates intimately among performers.

In a networked environment, the bonds that are created among distributed performers resonate as strongly as those among performers in a physical space – perhaps more so, as the virtual space encloses the performance, even as it opens itself to performance. As the shared virtual performance space remains open only for the duration of the improvisational performance, performers are acutely aware of its finitude and the performance is conducted in a space of immediacy, non-repeatability. Although the space can once again be opened, it can never be the same, a claim which can only be made of a physical space with great difficulty. Sharing a creative space of improvisation, in which the state of unpredictability provides a constant variable, creates for the performer a continuum of “becoming,” which recalls that described by Gilles Deleuze and Félix Guattari: “becoming is involutory, involution is creative.” (ii) The process of “networked” improvisation is characterized by mutual collaboration and evokes the effect of space folding in upon itself as distances collapse into a shared space. The human-computer-human exchange becomes, literally, in its “becoming,” a palpable presence. The state of improvisation is a tenuous, yet continuous state of becoming: immanence collectively experienced.

i Deleuze, Gilles, and Félix Guattari. *A Thousand Plateaus: Capitalism and Schizophrenia*. Trans. Brian Massumi. Minneapolis: 1987. 311.

ii Deleuze, Gilles, and Félix Guattari. *A Thousand Plateaus: Capitalism and Schizophrenia*. Trans. Brian Massumi. Minneapolis: 1987. 238.

**KEYNOTE - Steven Connor (School of English and Humanities
Birkbeck College, London)**

“Sound and the Pathos of Air”

Simon Waters (University of East Anglia)

“Proximity and composition”

**Jonathan Green, Keir Williams & Gregory Sporton
(Visualisation Research Unit, Department of Art
Birmingham Institute of Art and Design)**

“The Networked Multi-disciplinary Performance Environment”

Abstract

For performance artists, the development of stable, networked performance environments has relied heavily on the importation of models of the ‘social’ inter-personal communication type. Given that such communication responds to merely an aspect of the needs of artists, in practice this proves to be an imperfect and incomplete tool. In response to the challenge of producing a more rounded environment, the authors, through their work at the Visualisation Research Unit (VRU) at BIAD, have developed Collaborative Online Digital Arts (CODA) as a platform for drawing together networked resources from different disciplines.

The benefits, drawbacks, needs and future possibilities of existing networked performance will be discussed, as well as the omissions and shortcomings of CODA and other real time applications. However, the principle of creating a virtual performance environment has been abandoned for enhancing the traditional physical performance environment.

CODA was developed specifically to facilitate inter-disciplinary communication in multi-disciplinary performances. Central to CODA is the concept of the node. A node can be a computer with a specialist function, a sensor network, a human-computer interface device or even a person. All nodes broadcast media-in-specific data to a virtual data pool from which every node has access. This allows performers to interact with the environment without the necessity of having in-depth knowledge of how the data is being generated. For example, this allows the output from a video analysis node to be easily mapped onto a sound synthesis parameter on another node.

CODA could be thought of as a single ‘super instrument’ with which all performers can interact simultaneously. The technological infrastructure of the instrument is hidden, but the interface is not. Performers do not need to learn how it works, instead only what interactions it understands and what the results of those interactions may be. This methodology improves performer spontaneity considerably and lends itself particularly well to improvisation incorporating different disciplines where ad hoc exploration and experimentation are important.

This suggests that the network is itself the instrument, and leads to a further interesting phenomena. The data produced can be automatically archived and endlessly reformulated after real time presentation.

The paper will be presented with a short demonstration of CODA.

KEYNOTE - George E. Lewis (Columbia University)

“Living With Creative Machines”

Abstract

The computer has become an irreversible part of cultural and social histories of the arts in which improvisation has long served as a site for interdisciplinary exploration, exchanges of personal and cultural narratives, and the blurring of boundaries between art forms. Working as an improviser in the field of improvised music emphasizes not only form and technique, but individual life choices, as well as cultural, ethnic and personal location. For me, living, working, and performing with creative machines of my own design has led inevitably to the complex study of how improvisation produces knowledge and meaning.

Juan-Pablo Caceres, Alain B. Renaud, Pedro Rebelo and Chris Chafe (CCRMA, Stanford and SARC, Belfast)

“Network Performance: experiences and current directions”

Abstract

This paper outlines the ongoing collaboration in networked performance between the Sonic Arts Research Center (SARC) and the Center for Computer Research in Music and Acoustics (CCRMA) at Stanford University. We focus on strategies and applications that are being examined on both sides to design systems that take advantage of geographically displaced performers in a network performance context. We address issues of remote musicianship, gesture representation, performance identity, juxtaposition of different acoustic spaces and latency.

The paper looks at several types of media and protocols that are being investigated and developed specifically for network performances using acoustic and/or electronic instruments. These include the usage of cue messages using the Open Sound Control (OSC) protocol, sensors and 3D avatars to capture gesture information between participants. We also look at strategies developed to position sound sources in a multi-dimensional virtual audio space, for identifying the players and their performative roles based on non-visual cues. This is illustrated through several case studies of real and experimental network performances.

The paper also examines some preliminary studies on pioneering ways to reduce latency through psychoacoustic means.

A brief history of the various networked performances between CCRMA and SARC is described. The paper's presentation will make use of a video-link between SARC and CCRMA.

Panel Discussion with all participants and remote speakers (Chris Brown and Chris Chafe at CCRM, Stanford University California and Johannes Birringer from the Boston Cyberarts Conference). Led by the Director of Research at SARC, Pedro Rebelo.

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POSTER PRESENTATION
(all-day display in the SARC Foyer)

**Lydia Ayers and Andrew Horner
(Hong Kong University of Science and Technology)**

“Modeling Expression for the Chinese Suona”

Abstract

This presentation describes the spectral properties of a Chinese double reed instrument: the suona, and gives a brief description and short musical excerpt with its notation, idiomatic phrasing and typical ornaments. We describe the spectral characteristics of the source material, and then an expressive Csound additive synthesis design which captures more of the suona's subtle timbral and expressive