

**The First NYC Electroacoustic
Improvisation Summit,
New York City College of
Technology**

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by Eric Lyon

For a while now, mainstream computer music conferences such as the ICMC have faced a curatorial challenge, as computer music has become increasingly varied in its scope and has achieved near ubiquity in its means of production. It has become difficult to highlight a particular research agenda or compositional direction at these events because the conference is quickly swamped by the sheer variety of research directions in play. While the resulting smorgasbord of ideas and music, along with an essential community-building aspect, ensures the importance of the ICMC and similar conferences for the foreseeable future, it is now largely the role of smaller events to bring focus to thematic directions of particular interest.

This curatorial impetus has been met admirably well by a new event called the New York City Electroacoustic Improvisation Summit (EIS), conceived of and directed by Kevin Patton and

Adam James Wilson. The inaugural EIS took place at New York City College of Technology on February 27th, 2016. The focus of this summit was instrumental improvisation in interaction with computer systems that themselves provided improvised structures and signal processing.

The role of improvisation in computer music has an interesting history. We define computer-based improvisation as music in which the computer improvises or responds to the improvisation of a performer in real-time. Different inputs lead to different outputs, which is sharply distinguished from the “instrument and tape” model in which the output from the computer is fixed and irrespective of the musical behavior of the live performer. The slow CPU speeds available when Max Mathews wrote the first acoustic compilers at Bell Labs during 1957-1966 precluded computer-based improvisation. Instead, a compositional framework for computer music was established in which music is programmed and compiled to a fixed medium outside of real-time. As microprocessors and personal computers became available in the 1970s, ensembles such as the League of Automatic Composers began to create live, improvised, networked computer music performances. The publication of the MIDI 1.0 standard in 1983 greatly accelerated exploration of live

computer music, which often had a large improvisational element. Notably, most of this work was centered around the affordances of the MIDI protocol, which allows for organizing musical structure at the note, harmony, melody, rhythm, and instrument level, but affords little control over sample-level DSP.

At the same time, there was an intense focus on developing the possibilities of DSP in mainstream computer music during the 1970s and 1980s, resulting in important breakthroughs such as Frequency Modulation, LPC, and FFT-based processing. So there was a kind of bifurcation for a time in computer music between non-real-time, composed, DSP-focused music, and real-time, improvised, musical pattern-based music. However even as early as 1980, one can see a trend toward increasing interest in live, microprocessor-based music, when reviewing the titles of the papers from the 1980 ICMC.¹

In the decade of the 1980s, arguably the most ambitious computer music improvisation project was George Lewis’s *Voyager* (1986-1988), which features a computer-based, improvising expert system that analyzes and responds to live improvised input from human performers (or even from itself). As the 1990s progressed, a couple of important transitions occurred. First, increasingly

fast CPU speeds enabled a transition from MIDI (and the relatively unadventurous sounds provided by commercial digital synthesizers), to live digital synthesis, where the accumulated power of computer music research into audio DSP could be increasingly leveraged into live computer music performance, which often had a significant improvisational element. At the same time, as I’ve argued elsewhere,² computer musical timbre research seems to have hit a plateau in the 1990s, creating space for a redirection of computer music research efforts that, I believe, still remains to be fully acknowledged and acted upon. One such space is computer-based improvisation, which brings us back to the EIS.

While electroacoustic improvisation is not necessarily limited to computer music, at the 2016 inaugural edition of EIS, a decision was made to program exclusively computer-based improvisation. This curatorial decision led to a focused program of improvisational computer music works that demonstrated a broad range of musical expressivity, while validating the proposition that computer-based improvisation is a musical category worthy of attention.

Chapman Welch’s *500 Great Things about Wichita*, performed by Brandon Bell, commenced with vigorous on-body percussion strikes on chest and

legs, which was quickly joined by a delicate, computer-generated harmonic accompaniment. The work then transitioned to a series of short sections, each characterized by performance on a single percussion instrument with autonomous computer-generated accompaniment, based on live sampling of the percussionist. The eloquent and structurally convincing decisions made by Bell, combined with the freedom afforded by the improvisational context, made this a lovely and satisfying musical offering.

Clip Mouth Unit, a duo project of Dafna Naphtali and Jen Baker performed with a high-energy mix of Baker's trombone interjections and Naphtali's intense yet urbane vocal stylings, combined with varied and unpredictable computer-generated textures and live processing of the acoustic sound, all presented with a comic's madcap sense of timing. Despite a wide range of surprising musical swerves, the performance never lost focus.

My *Parallel Noise Construction* was composed for the new music violin duo String Noise. One of the violinists, Conrad Harris, was out of town, so I performed his part, with Pauline Kim Harris on the other part. The work is a noise-driven improvisation in which a program generates dual sets of improvisational performance instructions, while also randomly assembling different signal processing algorithms through

which the violins are processed. During the sound check, Kevin Patton performed my part on violin so that I could listen from the main hall. His improvisation was intense, and also quite different than mine, or Kim-Harris's. This suggests the intriguing possibility that at another electroacoustic improvisation summit, performers need not play their own pieces, but rather could swap into performing through someone else's system.

A Bird Escaped From the Snare of its Fowler by Kevin Patton and Nikki D'Agostino combined D'Agostino's hyper-intense saxophone playing with a more deliberate music coaxed from the computer by Patton, based on real-time analysis of the saxophone performance. D'Agostino's improvisation had some fine lyrical moments that nicely balanced the initial mode of intensity that dominated the performance.

Eighteen Eighteen performed by Adam James Wilson and Arto Artinian unleashed frenetic, heavy rock stylings performed by Wilson on electric guitar, and an intense keyboard backdrop performed on Haken Continuum by Artinian, all mediated by an oracular listening and improvising program written by Wilson. At times during the performance when a spooky third voice hovered, I was reminded of the mysterious third that walks always beside you, as described in T.S. Eliot's *The Waste*

Land.

Tattoo of a Gesture by Margaret Schedel stood out at in its use of a printed score that integrated both textual instructions and precisely notated rhythms. Christopher Howard contained the manic expanse of composer-provided possibilities within a taut, obsessively controlled, and increasingly virtuosic performance. While computer processing was clearly audible, particularly in live filtering of drum sounds, the main sonic focus was on the percussive sounds produced by Howard.

Solo for Voice and Computer composed and performed by Paul Botelho reminded of what an incredibly intimate instrument the human voice can be. In this delicate improvisational duet, Botelho seamlessly merged his live voice, an exquisite countertenor, with a live-generated texture built from sampling of the voice, and initiated by interactions with his laptop computer keyboard. Botelho cannily integrated expressive physical gestures into his performance, particular of the hands and arms, making his occasional human-computer interactions seem completely natural. The expressivity of the performance seemed both the point, and completely impossible to notate.

Through the aesthetic success of the first

EIS, Patton and Wilson have provisionally validated their proposition. They now face a wealth of possibilities to explore in the next EIS. Will the range of electroacoustic improvisations be broadened beyond computer interaction to embrace analog electronic systems? Will invited musicians workshop their systems for the public? Will members of the public have an opportunity to experiment with featured improvisation systems? Will the performances be broadcast to the Internet, or archived online? Will telematic improvisation be incorporated? Will improvisation systems with no humans in the loop be presented? Patton and Wilson have already made a serious contribution to computer music with their first EIS. It will be quite interesting to see what direction they choose with the next one.

Notes

1. <http://quod.lib.umich.edu/i/icmc/bbp2372.1980?rgn=full+text>
2. https://www.researchgate.net/publication/298981852_The_Future_of_Spatial_Computer_Music