Abstract

The University of Cincinnati College Conservatory of Music Center for Computer Music, (ccm), houses the work of faculty and student composers and researchers. The studios have been designed to provide a quiet, well-connected and comfortable environment for composition and research. High-level UNIX and Macintosh workstations are equipped for music. Programs in music composition allow a focus in computer music, and expanded courses now include four years of courses in computer music-related areas. Some software is created in-house, and distributed on the studio website: 'StochGran' for granular synthesis, 'Patchmix' for instrument building, and 'ca' for cellular automata-controlled granular filtering. Music appears on Sonic Explorations Concerts in the Studio Theater and many outside performances. Current research projects also include Internet Sound Exchange, a high bandwidth internet improvisation programming project, and a collaboration with Yale University, also utilizing Internet2. More information on music and research can be found at the studio website: http://meowing.ccm.uc.edu/.

1 Introduction and Construction

The juxtaposition of a fine, musically-traditional conservatory with a strong technological component both within CCM (the Electronic Media division as well as the computer music studio) and without (other colleges such as Engineering and Computer Science), produces a stimulating environment. The interaction of often acoustically trained composers, programming researchers creating compositional tools, electronic media students with popular interests, and the practitioners of more radical experimental aspects of composition and performance can cause a few sparks to fly as well as produce some truly excellent and innovative music.

Past CCM electronic music studio directors include Paul Palumbo, Jonathan Kramer, Martin Sweidel, Fred Bianchi, and Brad Garton. A new $90 million CCM complex of classrooms, theaters and studios was designed by Pei, Cobb, Freed and Partners. The studios are now located in the south annex to a historic brick and gargoyleed Memorial Hall, refurbished in 1995. The studios are equipped with clean power, cement flooring for sound insulation and well connected with conduits and high bandwidth internet connections. Incandescent lighting, ventilation that can be turned off for recording, and small studios/classrooms contribute to an excellent creative atmosphere. The computers include Apple, SGI and Linux workstations with equipment as needed to read and write compact disks, SVHS videos, or, as of this fall, DVDs. Some MIDI hardware and software are supported as well, and Softimage animation software runs on several machines for multimedia work.

The large supply of public domain signal processing software for composition enhance the UNIX and Macintosh platforms in the advanced studios.

The studio also has equipment for quality recording, and we are in the process of setting up an 8-channel sound system for both studio and concert hall.

The Studio Theater, a small internet-connected cave-like space with excellent acoustics and configurable layout provides an appropriate and inspiring space for which to compose.

2 Music

Music created in the studio is as diverse as the people who compose it. Director and Assistant Professor Mara Helmuth's tape works such as Abandoned Lake in Maine explore sampled sound from nature, and granular synthesis and sampling. Her collaborations with CCM percussion faculty Allen Otte, who is also a composer, have resulted in a compact disk, Implements of Actuation (Electronic Music Foundation EMF 023) and an evening-length monodrama for soprano, percussion and computer, Clotho: the life of Camille Claudel which was broadcast on Internet 2 from the Studio Theater on Sept. 28, 2000. She also collaborated with Matthew Suttor at Yale University on the Ankle Diver project over the internet.

Many fine contributions to computer music have been created by students in the composition and performance programs, and are heard on the Sonic Explorations Concerts which occur at least twice per year. The sense of community...
among many of the studio users has given us an environment in which ideas and musical perspectives can be exchanged openly. Perhaps for this reason, collaborations between composers and performers, and musicians and artists have also produced very interesting work.

Some recent compositions:
- Michael Barnhart - The Singing Bridge - based on sound from Cincinnati's Robling Bridge, the piece was the subject of a TV documentary.
- Ico Bukvic - Meditations - work for instruments created with his stochastic algorithmic composition software.
- Jason Emerson - Fill Frieda Funk
- Carlos Fernandes - World Symphony - for chamber symphony and electronics, based on the ideas of Stanley Kubrick and exploring the sounds of 5 continents.
- Garth Hangartner - Stained Glass - multimovement tape work exploring algorithmic composition.
- Joong Hoon Kang - Conversation - opposition of synthesis and bird sound, resolving into a Korean folk song.
- Brian McKinney - Forklift - construction sounds and pulsing algorithms.
- Myrna Setiawan and Rimantas Vingras - Piano Exploration - timbral composition with prepared piano.
- Chris Watts - μ - gently evolving 4 channel work.

More information and excerpts can be found under Music at http://meowing.ccm.uc.edu/.

4 Research

Active research projects in the studio include:
1. Internet Sound Exchange [Helmuth 2000] - Mara Helmuth's application for high bandwidth computer music improvisation over the internet.
2. Ico Bukvic has a Summer Graduate Research Fellowship to investigate 3d virtual sound/animation worlds.
3. StochGran - Mara Helmuth's granular synthesis application and Cmix instruments exist in UNIX versions (IRIX, NeXTstep) and ports to Linux and Macintosh are planned.
4. ca - Shyamsundar Vaidyanathan's application for cellular automata-controlled filtering currently on IRIX.
5. Patchmix - Cmix front end instrument builder (Nextstep, IRIX) by Mara Helmuth.

The public domain software is available at http://meowing.ccm.uc.edu/.

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References
