OVERVIEW

AAD

Center for Computer Music
Department of Music
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Since 1966, the Stanford Center for Computer Music (CCRMA) has been dedicated to the development of the computer as a new musical and artistic medium. A major concern of the center has been the advancement of knowledge and technique in creating musical timbres and spatial environments that offer new expressive possibilities to composers. In addition to sponsored research in digital audio techniques, psychoacoustics and signal processing, CCRMA has dedicated itself to maintaining a unique facility where composers and researchers can have access to sophisticated techniques with which to enhance their compositional and creative capabilities. CCRMA has also dedicated itself to public presentations of this unique art form through concerts and demonstrations.

In June of 1975, the Center was formed with funding provided jointly by the National Science Foundation for research and teaching in computer techniques of interactive sound production and the perception of timbre, and by a one-time grant from the National Endowment for the Arts for computing equipment for musical purposes. As a part of the Music Department at Stanford University, the teaching and academic aspects of the Center are provided for by Stanford University. Continued support has been from NEA, NSF, gifts-in-kind, and private donations. One aim of the Center has been to establish an international facility where researchers, composers, and students can work with strong computer-based technological support. We have succeeded in this goal.

CCRMA is based upon the use of a powerful interactive computer system for purposes of music composition, synthesis, and research, by staff, students, and invited researchers and composers. As a musical instrument, the computer system is possibly the most flexible of all instruments. To speak of it as a conventional musical instrument, however, is somewhat misleading because the system is capable of simultaneously producing a large number of independent voices having arbitrary timbral characteristics. It is much more general than a conventional musical instrument or synthesizer in that it can generate any sound that can be produced by loudspeakers, modify and transform real sounds entered into the system by means of microphone and digital-to-analog converters, remember and modify articulated musical input, and simulate the location and movement of sounds in a variety of illusory reverberant spaces. Equally important, the facility is capable of serving a number of composers and researchers simultaneously, providing for each a direct control over the medium to a degree which was never before possible.

Community

Aside from the implicit academic community, CCRMA also serves as a resource for the artist/composer and presents works to the public.

The artistic community is reached via a 4-week intensive workshop in Computer Music held at the Center each summer (offered as part of the summer session at Stanford University).

This workshop has an enrollment of 20 composers from the US and abroad each year and has been the impetus for other new computer music facilities including the new facility at UCSD headed by composers Roger Reynolds and F. Richard Moore.   Outside of the workshop, we also make the facility available to a limited number of visiting composers for extended periods of time to produce major compositions.

At least three public concerts are given each year with an audience of at least 500 people per concert and approximately 6 informal demonstrations are given at the center with an attendance of from 30-50 people.

Members of the CCRMA staff also give invited lectures and presentations at various institutions and colloquia in the U.S. and abroad.

Works composed at CCRMA are represented in concerts, competitions, and radio broadcasts both in the U.S. and abroad.

Associations with other Centers

The Center has close associations and has served as the prototype or impetus for many computer music facilities including Columbia, Colgate, Clark, Carnegie-Mellon, Michigan State, Marin, Queen's Univ. and the University of California at San Diego. The association with IRCAM, Paris, the institute directed by Pierre Boulez, has developed as proposed by Boulez in 1974 in that the two centers have a strong interaction through the exchange of research ideas, results and personnel.

Facility

The Stanford Computer Music facility consists of an F2 central processor with 512k memory, a specially built digital synthesizer/processor, display system having 11 terminals, and 3 large capacity disk drives. A special listening room has been built which contains professional quality tape recorders, mixer, and 4 channels of amplifiers and speakers. Two additional lab spaces contain four channels of amplifiers and speakers. The facility is located in a large building made available for the Center's use by Stanford University.