Introduction of Computer Music Studio of
Sonology Departmen
Kunitachi College of Music

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Abstract
The Sonology Department was established at Kunitachi College of Music in 1991. Since then, the creation of computer music and research works have been realized in a studio environment based mainly on NeXT computers and IRCAM Signal Processing Workstations. Since 1993, SGI computers, have been introduced into our studio in order to extend our work into the field of computer animation and multimedia arts. The possibility to work on both audio and visual digital technology gives us unique activities as a computer music studio.

1. Education
About fifty students including postgraduate students and auditors are attending our classes. In the first year, students study our basic subjects including soundscape design, electronic and computer music history, recording technique, Max for NeXT/ISPW, C-Language, composition and so on. In the second year, students begin to select their own subjects, and in the third and fourth year concentrate on their own themes, for instance, research on soundscape, creation of computer music, computer animation, sound installation, or multimedia arts. Some students also work on writing their original software. One of our important education principles is to introduce the most recent informations to students. Therefore we often arrange computer music classes by guest professors from abroad including Rick Bassett, Larry Austin, Les Stuck and Erik Oña. In addition to these classes we occasionally organize lectures by artists, for instance, Takashi Harada, Kazue Mizushima, Neil Rolnick, Joel Ryan, Bosch and Simone, and so on.

2. Studio Environment
In 1991, when the sonology department established, we started the computer music studio with NeXT computers and ISPWs. Since then, our computer environment has been growing with the NeXTSTEP operating system. Besides eleven NeXT computers including nine NeXT cubes with ISPWs we employ three Sun Sparc-5 computers and two PCs running the NeXTSTEP operating system. In 1993, we started introducing SGI computers into our studio in order to extend our creation into the field of computer animation and multimedia arts. These computers are connected via Ethernet and NetInfo Manager, NIS and DNS are managing our network system. In 1996, two Sun Sparc servers running Solaris operating system were introduced into our network to expand our hard disk storage capacity and 150Mbps ATM LAN for SGI computers was also introduced in order to maintain higher data transfer speed especially for image data.

Our main software tool is Max for NeXT/ISPW. Besides it several common music tools such as SoundWorks, Finale, Performer and Vision are employed. For computer animation we work with Alias/Wavefront softwares including TAV, Dynamation, Video Composer, Power Animator and so on.

3. Development
Several significant software have been developed by students. The "Edge" that had been developed by Shu Matsuda for NeXT dimension computer and ISPW, was presented in the ICMC 95. This system, an interactive computer music performance system, enables visual data from video camera to control audio events in real-time. Sachiko Mokusho developed the sound editing and mixing application "MusiCraft" for the NeXTSTEP GUI environment. And Osamu Takashiro realized the interactive multimedia computer system "Vixture" using SGI and NeXT/ISPW computers. His paper will be presented in this conference. Besides programming in Objective-C and C-Language students also write original patches in Max for general use, for instance, Takenori Katagiri's "tOp system" which realizes the fully digitalized sound mixing and editing using several ISPWs with digital audio cards.

4. Creation and Activity

Because of our studio environment, most of our works have been created for instruments and live computer electronic system using MAX for NeXT/ISPW. Students also realize multimedia interactive art, sound installation with or without computer, and computer animation with classical music or original one. Most of these students’ works have been presented in our annual "Try-Out" concert in November. Students have also opportunities to present their works outside of the campus, in public places, sometimes offered by computer or music companies. And in various occasions we support or join the realization of computer music concerts, recordings of computer music, festivals, exhibitions and so on.

Since 1995, we have been organizing the InterCollege Computer Music Concerts in collaboration with the Information Processing Society of Japan/Special Interest Group on MUSic and computer(IPSJ-SIGMUS), in order to promote computer music activities among students in Japan. In these concerts, works by students of the State University of New York at Buffalo(1995) and the University of California, San Diego(1996) were also presented along with works by Japanese students. Miller Puckette of UCSD were invited for the presentation last year.