Computer Music at Texas A & M University

Mara Helmhuth
Texas A & M University
Music Program
Mailstop 4260
College Station, TX 77843
mara@ tammail.tamu.edu, mara@tamu2000.tamu.edu

Abstract:
Computer music at Texas A & M University involves sonic design, analysis, composition, and exploitation of listening contexts. The first course covering signal processing techniques and musical analysis of electroacoustic music was taught this year. Musical works were written and played on several concerts and radio shows. Research projects extending granular synthesis and other techniques in NeXTstep applications, and graphical collaborations with the School of Architecture's Visualization Lab are in progress.

1 Introduction
This is the first year that computer music has been taught at Texas A & M University. As the University had two labs of NeXT computers, it was not difficult to get started. The undergraduate course Sonic Design: Introduction to Computer Music brought forth a flurry of activity using public domain and other sound generating and processing applications. Some interesting electroacoustic studies were written in the first semester, and more advanced work is planned in both sound design and programming. An audience-interactive computer music installation is being designed. In this presentation, you will hear music written by the sonic designers at Texas A & M.

2 Beginnings
The focus on creating an innovative music program here at Texas A & M University has now been extended into the domain of computer music. The small but growing music program in the Liberal Arts College created a position in Electronic Music, Composition, or sonic design, and research using NeXT computers is done in the new computer music course. Several concerts of tape music and radio shows acquaint the community with more experimental types of computer music. Future projects include a monthly concert series for next year and plans for a new computer music studio. A higher level course incorporating advanced computer music techniques and more aesthetic considerations will also be taught next year.

3 Hardware
The University has two labs of 20 NeXT computers each. This year the computer music class made use of the sound and music capabilities of the NeXT, with built-in conversion, DSP, etc. Equipment including a 1.2 GB Seagate Wren VII hard disk, an APS 4 mm DAT backup drive,
an Ariel digital microphone and a Stealth DAI 2400 has been purchased for a small studio. A new lab for computer music is in the planning stages.

4 Software

Running on the NeXTs are many public domain music applications created at Princeton, Columbia, Stanford, and Skidmore, such as rt, Cmix, Pachmix, StochGran, SynthBuilder, Bestie, Edndp, CmixEZ, and SynthBuilder. Also, the NeXT music kit and commercial programs such as SoundWorks and NoteAbility are available. This diversity of processing capability facilitates software synthesis, signal processing techniques, sampling, composition and notation. One of the pieces of software being written is a NeXTstep application, Collage, which plays soundfiles windowed according to user input.

5 Composition

Works created this year include Mara Helmuth’s Chimeplay (created for the composer’s wedding), using sampled obisital wind chimes, bells, drums and voice, which were algorithmically mixed, and processed in rt and Cmix with filters and phase vocoding. A number of pieces were created by graduate and undergraduate students, including Adam Klein’s algorithmic kanji, expressing "sullen opposition", Parke Gregg’s driving Temple, and Alex Dubler’s Island, all using Karplus-Strong plucked string synthesis. Elizabeth Weissinger, Bliss Marsh, Stephen Manual, Will Brooks (VUM2), Sean Smith, Joe Dowling (Time), Philip Brown, Kyle Clark (Survival), and Robert Michael (Alpha and Omega (The Epic of Life)) all wrote pieces for the fall or spring concerts using both synthesis and sampling.

6 Listening Events

Several tape music concerts were held in the last year, including a brown bag lunch concert of music which was broadcast on the university radio station, and two concerts of student works. In addition to the previously mentioned pieces, several MIDI compositions were created by Michael Nimmocks (Intermolecular Forces) and Benjamin Day for these concerts. Next year Sonic Explorations, a monthly series, will present local and internasional electroacoustic music, bring in composers to talk about their music, and experiment with listening environments particularlly appropriate for computer music. An installation, Sound Colors is also planned using the Collage software.

7 Research

A method of graphical representation of computer music was developed, consisting of time-aligned sonogram, amplitude line, phrase markings and other appropriate notation. Several projects are in progress. An extension of the NeXTstep Cmix granular synthesis application StochGran has been undertaken. The Cmix instrument-building interface Pachmiz will be updated and refined this year. A project in collaboration with the Visualization Laboratory in Architecture is also in progress, including work linking granular synthesis sound with graphical objects for a multimedia presentation. Areas of future interest include more extensive sound/graphics collaboration.