Computer Music in China

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ABSTRACT

This paper is a brief report of the activities of computer music in the People’s Republic of China. It chronicles the establishment of the initial activities of the academic and industrial supported studios. In addition this report covers various activities in the areas of teaching, research, production and publication. In conclusion this paper reviews the problems of the dissemination of computer music in China and plans for the establishment of a national computer music organization.

1. PERFORMANCE AND COMPOSITION

In 1981 computer music in was introduced to the people of China by French composer and performer, Jean Michael Jarre. His concert of live synthesis and laser projections was witnessed by millions of people via Chinese television. From 1981 to 1984 Professor Zhao Xiao-sheng from the Shanghai Conservatory of Music was in residence as Visiting Scholar and Guest Professor at the University of Missouri at Columbus, Missouri. In 1982 Professor Zhao Xiao-sheng composed the first piece of Chinese electronic music, Dance in Chinese Palace, at the University of Missouri’s Electro-Acoustic Studio. Even though Dance in Chinese Palace is a landmark composition it is still not well known in China. In 1984 the young composers Tan Dun, Zhu Shi-rui, Chen Yi and Zhou Long from the Central Conservatory of Music successfully presented the first concert of electronic music in Beijing. In 1990 Zhang Da-wei produced his own concert of computer music compositions and his compositions in the traditional Chinese style.

2. TEACHING AND RESEARCH

In 1984 the first computer music laboratory was founded at the Shanghai Jiao Tong University and the Computer Department, in cooperation with the Shanghai Conservatory of Music, has been offering a Master Degree in Electronic Music since 1984. In 1987 the Institute of Musical Acoustics and Computer Music was established at Peking University and the Chinese Conservatory of Music opened its Electronic Music Studio. The Beijing Institute of Modern Physics of Peking University and the Music Institute of Chinese Arts cosponsored the First National Symposium on Music/Physics and Music/Psychology in 1991. The symposium sessions dedicated to computer music included:

- Non-linear Physical Processes and Computer Synthesis of Music
- Computer Music Sound and the Research of Music
- A Descriptive Language and Pedagogic Method for Computer Music
- A Computer-Assisted Music Instruction Set

The main center for computer music research in China is the Shanghai Jiao Tong University. The main focus at the university is on synthesis theory/techniques and basic computer system research. Studio hardware includes:

- An IBM PC
- Custom designed MIDI Interface
- Electronic Piano Synthesis Engine
- Laser Printer

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Studio software provides multi-voice MIDI control and score printouts in both western staff notation and cheve systems songbooks formats.

The applications of the studio are focused on four areas:

- Computer assisted music instruction for musical grammar, harmony and ear-training.
- Development of databases of information on Chinese folk songs.
- Transcription by computer of masterpiece literature for the Guqin and Pipa into staff and/or cheve notation.
- Algorithmic analysis for recording music.

In addition, researchers at the Computer Music Laboratory of Shanghai Jiao Tong University are currently exploring various other directions in music research. Researchers at the Computer Music Laboratory of Shanghai Jiao Tong University are also exploring various other areas of support for the Chinese musicians' research.

On April 22, 1992 the Institute of Musical Acoustics and Computer Music at Peking University presented a symposium and functional software package for the teaching of Chinese music. Entitled A Computer-Assisted Instruction Set, its specific functions are to assist in:

- the learning and study of musical grammar
- the development of musical exercises
- performance and composition in the cheve system

The hardware supporting these sessions included the Zhonghua Learning Computer with a hard drive and related software and an electronic organ keyboard and a sound card. The total cost of the Computer-Assisted Instruction Set is about ¥ 500 ($100 U.S.A.). This modest cost and functionality (supporting a Chinese five-tone scale, gong and drumming rhythmic structures and cheve notation) has greatly popularized this system in China.

3. PRODUCTION AND PUBLICATION

The production and publication of computer music is supported by the institutes and studios of the Chinese universities and by various commercial computer corporations in Beijing. Hua Yuan Technology Company established the first Apple Computer Center in the People’s Republic of China in May of 1989. The Apple Computer Center is a combination sales, demonstration and service center for Apple products such as the Macintosh line of computers and related software. The Hua Yuan MIDI System consists of MIDI tone generators, a standard MIDI keyboard and multi-effects processor driven by a Macintosh hard disk system with various software applications such as Performer, Professional Composer, Concert Ware, Sound Bank, etc.

The Beijing MIDI Center was founded in November of 1990. This facility has developed its own instrumentation which includes MIDI interfaces and controllers, a MIDI based teaching system and MT-1D hardware board for exercises in musical grammar. In addition the Center has developed a variety of sound cards (voices) for commercial synthesizers and many of these cards are dedicated to the replication of the timbres of traditional Chinese instruments. In order to further popularize MIDI technology the Beijing MIDI Center sponsors a series of colloquia and presentation in various off-site locations in various cities an has recently sponsored a competition for the First National Composition Award in Computer Music.

Beijing Stone Group Company has provided facilities and support for the production of many musical projects including compositions and hardware/software development for composition and performance. On January 1st, 1992 Beijing Stone Group Company established a new products
division called the Computer Music Department and has been developing the Stone MSR-901 Computer Music System. This system operates on an IBM-PC platform, driving a LAPC-1 sound card using MSX-901 system and related software. The Stone MSR-901 Computer Music System is integrated with its own amplifier and monitor. The system provides:

- automated musical accompaniment algorithms
- staff notation printers
- a sound bank of replications of Chinese musical instruments


On June 1st, 1992, the first Chinese electronic professional music publishing system, the "KeYin" Electronic Set-Type System, was made available to the public. The Institute for Chinese Printing Technology has been cooperating with the People's Music Publishing House in the development of this system since 1989. Today the "KeYin" Electronic Set-Type System, is a new benchmark for Chinese publication.

4. THE STATE OF THE ART

The basic concerns of the state of computer music in China are lack of software, the problems of dissemination of information and lack of an organized national support group. Software imports are too expensive for even the universities, let alone individual users. Chinese developed software is presently not effective enough for commercial distribution. Many of the institutions with adequate instrumentation lack the technical expertise or staff needed to take advantage of the resources. Other institutions with experienced faculty and staff are not supported by the advanced equipment needed for research. The sophisticated use of unfamiliar and complex tools for artistic purposes has been and continues to be problematic. Perhaps the most fundamental difficulty is the disparity in the type and degree of expertise possessed by the collaborators. As to the "computer musician", there is a large number of composers and performers who are expert musicians with the imagination and discipline necessary to work with digital music environments. At the same time the personnel with the technical capabilities often lack the musical perspective. Without arguing the degree to which this "separation of powers" is and can be mitigated, it is a fact that considerable mutual resources frequently exist in isolation. Such "exercises" have requid collaborations of a sort heretofore rare in China's musical world.

It is clear that a Chinese Computer Music Society and Advisory Committee should be founded as soon as possible to organize and conduct activities and facilitate a free flow of information in the field of computer music. On November 3rd, 1992, The Beijing Institute of Modern Physics of Peking University and the Beijing Stone Groups Company will cosponsor the Second National Symposium on Music/Physics and Music/Psychology to exchange information and discuss plans for the establishment of a national computer music support organization. The direction of the music of the future is never clear, but the exploration of new approaches and methodologies, of new technologies, and of new music is on the horizon for the people of China.