COMPUTER JAM

Trumpet Virtuoso Wynton Marsalis Explores the Newest Frontiers of Music--In Concert with The Computer

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COMPUTER JAM documents the creation and performance of a new jazz composition featuring five-time Grammy winner Wynton Marsalis.

Using the most advanced technologies at Stanford's pioneering computer music center, Marsalis explores the newest frontiers of music: the creative interaction of man and machine.

In an uniquely American adventure, Marsalis will blend jazz with high-technology. He will play his trumpet while commanding one of the most complex instruments ever controlled by a performing artist.

The hour-long program tracks Wynton Marsalis as he masters new technologies to make a new kind of music. The premier is heard by a large audience at Stanford University, the birthplace of Silicon Valley.

COMPUTER JAM is a program with broad appeal to jazz fans and classical music lovers throughout the world. It will attract many others who are interested in computers and new technologies. The program is the culmination of twenty-five years of research into developing the computer into a musical instrument. As the only person to have won a Grammy in both jazz and classical music, Wynton Marsalis is highly qualified to test the musical potentials of the computer era.

Blending jazz with high-techology computer music, **COMPUTER JAM** is a uniquely American musical experience!

COMPUTER JAM: Outline of Sequences

1. Wynton and group performing at Stanford--we hear the end of the set performed prior to "computer" piece.

2. Title sequence. Intercut to the music of Armstrong/Ellington doing "It Don't Mean a Thing If It Ain't Got That Swing," chronological shots documenting the evolution of jazz and the evolution of the computer--ending in Silicon Valley.

3. Harlem, where we meet Albert Murray who sets up the theme: improvisation is the ultimate human endowment.

4. Stanford's Center for Computer Research in Music and Acoustics. Wynton and composer Dexter Morrill explore the technology which will enable Wynton to interact with the computer music system.

5. Albert Murray on Jazz and Wynton playing in club setting. Al tells of Will Marion Cook who taught orchestration to Ellington, The Southern Syncopated Orchestra touring Europe in 1919. The bias:"can they read music?"

6. At Stanford: animation which shows how computers make musical sounds. Dexter Morrill in throws of composition.

7. Wynton and Dexter working together, dealing with technical and artistic problems, preparing for the performance.

8. Wynton rehearsing. Al Murray's view of the challenge: "is he going to swing?"

(Length of 1-8: Approximately 38 minutes)

9. The Performance of COMPUTER JAM piece

(Approximately 20 Minutes)

COMPUTER JAM-- Description of Sequences

Opening: Stanford

The program opens on Wynton Marsalis and his jazz group performing at Frost Amphitheatre. Night in a wooded setting against the illuminated backdrop of the Stanford campus. A large, attentive audience has come to hear jazz and the new "computer piece.". The jazz set ends. Wynton acknowledges the applause. Intermission. We follow Wynton off the set. Stage hands begin moving computers, monitors and speakers onto stage. Wynton: "Jazz should be a portrait of America at it's highest, idealized level.."

Titles

COMPUTER JAM titles appear over intercut sequences of chronological still photos showing evolution of (1) jazz (shots of Armstrong, Basie, Ellington, Parker, Gillespie, Monk, Coltrane, Coleman) and
(2) the computer (Babbage and his Difference Engine, Watson, ENIAC, Univac, Von Neumann, speeding forward up to Wozniak, Jobs and contemporary Silicon Valley.)

Harlem: Meet Albert Murray

We begin our story in Harlem. We meet Albert Murray, eclectic philosopher- at- large, jazz historian and the man that Duke Ellington called: " the unsquarest man I know."

Murray: " Jazz is all about change and creativity...You're operating on the frontier all the time."

Murray is a far-ranging intellect who is as comfortable with Thomas Mann and Greek myths as with cybernetics and the Blues. Murray will be our observer and commentator, weaving together the threads of the story. He sets out the major theme of the program: " **Improvisation is the ultimate human endowment...**

Murray speaks of " inifinite-alertness-become-dexterity"-- as the functional source of the magic of all master craftsman.

We will see that the world of Jazz and the world of the Computer share this magic.

Stanford: The Computer Music Center

From Harlem, we go to The Stanford Center for Computer Research in Music and Acoustics in Palo Alto California. The Center is housed in an imposing, hill-top mansion full of electronic devices: synthesizers, keyboards, computer terminals, tape decks.

Wynton intends to perform an original jazz composition for trumpet and computer generated music. The aim will be to create a successful interaction between the artist and the technology.

We join Wynton as he explores the potential of the computer-as-musical instrument. His guide is Dexter Morrill--the computer music composer who will collaborate with Wynton in creating the new piece. The key is for Wynton to get a feeling for the *interaction* that is possible with this new technology. He experiments with a variety of devices, including a newly designed "MIDI" which connects his horn to a variety of synthesizing and processing gear. Morrill explains how Wynton's live" performance information" is translated into a stream of binary data which can be used by the processing technology. So, when Wynton plays a simple line on his trumpet---full, rich chords emerge from the computer system. The chords are immediately stored for Wynton's later use and can be recalled by him at any time during the performance. Wynton experiments with a technology which allows him to pre-select a range of computer voices which would be triggered by his melodic line. A foot-pedal device will give him command of the process at any point.

He will be able to control pitch, transposition, feedback, reverberation, the speeding up and slowing down of the music. Wynton Marsalis begins to master the difficult techniques needed to interact with the computer system at his disposal. But, can you swing with a computer? Will there be drama? Surprise? Wynton has got to know what he can <u>do.</u> As his friend Stanley Crouch says: " As with all art, the more you know, the more you can do."

Jazz

Next, we return to New York. In a club setting, we hear a jazz performance of a short piece by Wynton and his group.

Al Murray reflects on the notion that jazz is "natural" and therefore "unconscious "art, making jazz (somehow) culturally inferior, i.e. making jazz technically and aesthetically not as "serious" as classical performance. He compares Duke Ellington to an Elizabethan playmaker: noting Ellington's stylization, his concern (as with all great artists) with *how it feels to be human.*

He reflects on improvisation--the ability to swing. "Improvisation is the key to that unique competence which generates the self-reliance, the charisma, of the hero. "

Improvisation in Louis Armstrong: we see examples.
A jam session in progress. Analysis.
Ellington's C Jam Blues---Analysis
Al Murray invites the computer to jump in.

Louis Armstrong's recordings are "interpolated" with other jazz peformances. (The computer will make it possible for us to hear great jazz trumpeters playing the same tune, without our being able to identify any abrupt changes bewteen artists.) Al Murray uses this technology to draw our attention to the nature of improvisation and swing.

How the Computer Makes Music

Back at Stanford, John Chowning --computer music pioneer and founder of the music center--narrates an animated sequence" Intimate Life of the Computer." We discover how computers make sounds.

Traditional instruments have always been driven by two physical systems. A column of air moving through a variety of tube shapes and sizes or a vibrating string or surface attached to or stretched over various resonating enclosures. If instruments are thought of as points on a continuum, the computer can not only mimic those points, but it can fill in all the rest of the continuum. We see how this is possible.

Dexter Carries On

We find Dexter Morrill in the throws of composition. An expert brass player himself, he is directer of Colgate University's Computer Music Lab. In his composition, Dexter wants to deal with what he calls the "improvisation problem" and the history of jazz.

What does improvisation mean to this piece?

What does interaction mean?

How does the equipment fit in?

What does the history of jazz mean to the piece?

The computer is like no other instrument. It has no specific sound. Initially it was operated from a keyboard and now can be played through other traditional instrument interfaces like guitars, strings or reeds. It can easily replace a group of musicians, do amazing things. But what does it all have to do with music?

Dexter and Wynton review the rough outline of the score. The composition is designed to take approximately twenty minutes to play. The collaboration between Dexter and Wynton requires each to push the edges of their respective work.

Composers never had to worry about more than the assortment of sounds that specific instruments could produce. Now the composer and musician together can assume the role of the instrument builder.

Dexter demonstrates for Wynton a musical TV monitor for him to "read" while performing. This new device replaces the music stand and score, scrolling musical notation on the screen as the piece progresses.

Rehearsal

At Stanford, rehearsals are in progres. We see a visual essay in the spirit of the opening title montage: it moves from the rehearsal for the concert to shots of gleaming high-tech factories along the "Valley's" main freeways.

The computer is one kind of "future." The great computer innovators are adventurers on the frontier--the bold, master craftsmen of our times.

Returning once more to Al Murray in Harlem, he reminds us of the heroism and self-reliance embodied in the Blues tradition.

" Infinite alertness-become-dexterity. "

" Improvision is the ultimate human endowment."

The Performance

The piece will utilize a wide variety of equipment and computer music techniques. Members of the Research Center will be onstage to help operate the computers and real time synthesizers.

COMPUTER JAM will have a "jazz concerto" focus, where the expression of the soloist is enhanced by computer music equipment and where the sounds of the computer will be shaped by Wynton's musical gestures.

Before an audience of ten- thousand persons on the Stanford campus, we hear the performance. of COMPUTER JAM.

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