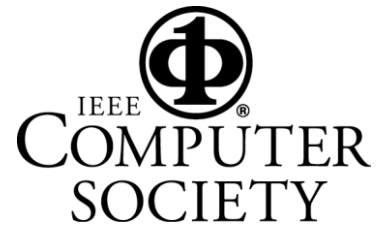


PRINCETON ACM / IEEE-CS CHAPTERS
APRIL 2023 JOINT MEETING



Music, Music Representation, and Music Retrieval

Music is an *art*; a *performing* art; and a fundamentally *nonrepresentational* performing art. Each of these characteristics has a profound effect on how musical information can be represented and therefore on how it can be retrieved. As an art, numerous works in a given medium use the same elements, but artists creating new works use them in novel ways almost constantly. Being a performing art means that in general a performance of a musical work is not the work itself; any performance is simply an instantiation in sound of the work, one of a myriad of possible instantiations. The work itself can be described by music notation in what is called a *score*. Finally, being nonrepresentational means that everything is abstract: music need not be, and usually is not, focused on objects from the real world.

This talk will discuss the implications for music retrieval of these fundamental characteristics of music. Among the most important is that, as a nonrepresentational art form, music retrieval is more like retrieval of poetry than prose: denotation (“meaning”) is unimportant; connotation dominates it.

This talk will also briefly discuss retrieval of music from common representations, including both audio and the remarkable edifice of Conventional Western Music Notation (CWMN). The talk will show examples of notation produced by an experimental version of the Nightingale music-score editor, notation that for the first time enables CWMN to represent precisely what happens during a note.

Donald Byrd studied music composition at Indiana University in the late 1960s. By the time he graduated, he had discovered computers and gotten interested in their potential to help musicians, especially in terms of music notation. After some years as a programmer and consultant at the University’s academic computing support services, he received a Ph.D. in Computer Science with a dissertation on music notation by computer. Since then, Byrd has worked extensively both in industry and academia. He did sound design and programming for a digital synthesizer company and software engineering for a GIS company, and he led development of the influential music-notation program Nightingale. Besides computer-notated music, his academic background includes research on notations as information representations; work on information retrieval in text, especially visualization and human/computer interaction aspects; and work on music information retrieval, digital music libraries, and optical music recognition. More recently, he has worked on the “Universal Temporal Architecture,” a timeline-based system for visualizing, exploring, creating, and “playing” (in the sense of playing a recording) any phenomenon that occurs over time, on any timescale from fractions of a femtosecond to billions of years. Now officially retired, Byrd spends his non-family time volunteering for Braver Angels, a nonpartisan, nonprofit organization working to overcome the extreme and toxic polarization of the country, as well as composing and developing music software.

Date:	Thursday, April 20, 2023, 8:00pm
Place:	HYBRID MEETING (both in-person and online)
In Person:	Princeton University Computer Science Building Small Auditorium, Room CS 105 35 Olden Street, Princeton NJ
How to register for the online meeting:	<ul style="list-style-type: none">• Send email to PrincetonACM@gmail.com• OR Register on Meetup.com (http://meetup.com/IEEE-Princeton-Central-Jersey-Section)
Information:	Dennis Mancl (908) 285-1066
On-line info:	http://PrincetonACM.acm.org

Princeton ACM / IEEE-CS meetings for the 2023 season will be “hybrid”. You have a choice: attend the talk in-person, or view the meeting online from home. To join the online, you must register in advance, and you will receive an email with instructions for how to connect to the talk.

All Princeton ACM / IEEE-CS meetings are open to the public. Students and their parents are welcome. There is no admission charge.

For the April meeting, a “pre-meeting dinner with the speaker” will be held at 6:00 p.m. at Applebee’s Restaurant on Route 1. Please send email to princetonacm@acm.org in advance if you plan to attend the dinner.

