

T6: Why Hip-Hop is interesting

Hip-hop, as a musical culture, is extremely popular around the world. Its influence on popular music is unprecedented: the hip-hop creative process has become the dominant practice of the pop mainstream, and spawned a range of electronic styles. Strangely, Hip-hop hasn't been the subject of much research in Music Information Retrieval. Music research rooted in the European music traditions tends to look at music in terms harmony, melody and form. Even compared to other popular music, these are facets of music that don't quite work the same way in Hip-Hop as they do in the music of Beethoven and the Beatles.

In this tutorial, we will argue that a different perspective may be needed to approach the analysis of Hip-hop and popular music computationally—an analysis with a stronger focus on timbre, rhythm and lyrics and attention to groove, texture, rhyme, metadata and semiotics.

Hip-hop is often said to integrate four modes of artistic expression: Rap, turntablism, breakdance and graffiti culture. In the first part of this tutorial, we will discuss the emergence and evolution of Hip-Hop as a musical genre, and its particularities, focusing our discussion on beat-making (turntablism and sampling), and Rap. A second part of the talk will highlight the most important reasons why MIR practitioners and other music technologists should care about Hip-Hop, talking about Hip-hop's relevance today, and the role Hip-hop in popular music. We highlight its relative absence in music theory, music education, and MIR. The latter will be illustrated with examples of MIR and digital musicology studies in which Hip-hop music is explicitly ignored or found to 'break' the methodology.

Next, we review some of the work done on the intersection of Hip-hop and music technology. Because the amount of computational research on Hip-hop music is rather modest, we discuss, in depth, three clusters of research on the intersection of Hip-hop and music technology. The first two are related of MIR, focusing on 'beats' and sampling, and Rap lyrics and rhyme. For the third topic, situating Hip-hop in the broader topic of music technology, we look at how an important role for both music technology and Hip-hop is emerging in music education. Finally, the last part of the talk will give an overview of resources and research opportunities for Hip-hop research.

This tutorial is aimed at anyone interested in Music Information Retrieval and popular music, whether familiar with Hip-hop music or not. We also aim to make it relevant to a broader audience interested in music technology, touching on topics like sampling and samplers, and Hip-hop in technology and music education, and to anyone interested in text processing, with an additional focus on the analysis of lyrics.

Throughout the tutorial, we intend to include a lot of listening examples. Participants will access to an extended playlist of selected listening examples, along with a short guide to the significance of the selected recordings.



Jan Van Balen researches the use of audio MIR methods to learn new things about music and music memory. Living in London, he is finishing his PhD with Utrecht University (NL), on audio corpus analysis and popular music. As part of his PhD project and with colleagues at Utrecht University and University of Amsterdam, he worked on *Hooked*, a game to collect data on popular music memory and 'hooks'. Other work has focused on the analysis of the game's audio and participant data, and on content ID techniques for the analysis of samples, cover songs and

folk tunes.



Ethan Hein is a doctoral student in music education at New York University. He teaches music technology, production and education at NYU and Montclair State University. As the Experience Designer In Residence with the NYU Music Experience Design Lab, Ethan has taken a leadership role in a range of technologies for learning and expression. In collaboration with Soundfly, he recently launched an online course called Theory For Producers. He maintains a widely-followed and influential blog at <http://www.ethanhein.com>, and has written for various publications, including Slate, Quartz, and NewMusicBox.



Dan Brown is Associate Professor of Computer Science at the University of Waterloo, where he has been a faculty member since 2000. Dan earned his Bachelor's degree in Math with Computer Science from MIT, and his PhD in Computer Science from Cornell. Before coming to Waterloo, he spent a year working on the Human and Mouse Genome Projects as a post-doc at the MIT Center for Genome Research. Dan's primary research interests are designing algorithms for understanding biological evolution, and applying bioinformatics ideas to problems in music information retrieval.
