

Digital Audio Asset Archival and Retrieval: A Users Perspective

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Abstract

Both academically and professionally, the problem of coding and formatting audio for archiving and retrieval is constantly present. Many factors weigh in on how to build naming conventions, search criteria, and meta tags for audio assets, particularly in large scale non-linear virtual environment productions. The tendency to build new libraries for each project is most intensive but allows a user to constantly be aware of the assets available and who created them. This requires inventing or reusing a new data retrieval and archiving engine or platform for each project. Needless to say, this approach is impractical and inefficient. The music industry has solved some of these issues through the convenience of having stylized "brands" of music to label. The user can decide whether he/she likes the music and move on to the next piece of similar character. Examples of engines like this include Pandora, Rdio, Spotify and of course Apple and Google. These music streaming automated music recommendation services function moderately well until they don't. In sound effects, this solution is more complex. When there are thousands of samples of differing footsteps, squeaks, knocks, thumps, etc. to manage per category a more refined Content Management System (CMS) is required. Again, the impractical issue of building from scratch is introduced. One method being looked at is Fourier transform based pattern recognition analysis and algorithms. This method uses discrete Fourier transform based pattern classifiers, defined and correlated by a designer, to map, or compare against a predefined data vector specifying a particular sound pattern. This research has already been experimented with but usually not in the form of a searchable library tool. An added layer to this method includes the use of artificial intelligent programming as part of a machine learning tool to help expedite searching and filing of data assets. This is currently being experimented with in the Interactive Arts and Media Department where students and faculty are working on solutions to some of these problems. The landscape of audio, which includes music, sound and silence is massively comprehensive in size and complexity. Methods and strategies for solving for a universal identifying and archival tool are constantly on the minds of composers, sound designers and all who deal with audio assets in linear and non-linear environments. My discussion will raise some of the issues surrounding classifying audio and storage as well as problems encountered by sound designers and composers in the field.