The Echo Nest Advanced Playlisting

Today's on-demand music services and interactive radio services offer listeners millions of tracks, causing a strong need for technology capable of finding the right songs within large catalogs for particular users. The Echo Nest's Advanced Playlisting technology leverages deep comprehension of music's cultural and sonic characteristics and the listener's musical taste to generate high-quality, personalized, musically-meaningful playlists and interactive radio stations.

What's Wrong with Shuffle, Smart Playlists, Etc.

Random playlisting (shuffle), smart playlisting (based on a user's ratings and behavior) and "genius"-style playlisting (randomly-selected tracks from a set of similar artists) are adequate for small music collections. But as listeners shift to cloud-based music services that offer millions of tracks in addition to their own local music collections, those methods fail to scale.

Shuffle can't product meaningful playlists by its very nature. Smart playlists and the interactive radio stations they power tend to rely on humans to codify each song, resulting in small libraries, or else use the brute force method of associating songs based on "like" ratings or purchases by similar users, which does not to account for cultural and musical factors and leads to false conclusions. Meanwhile, "genius"-style playlisting services fail to differentiate between an artist's songs. Given that musicians evolve stylistically throughout their careers, this results in clumsy recommendations. All three are one-size-fits-all solutions that a user cannot actively customize to contain music from a particular era or in a particular style, tempo, energy level, etc. And in any of them, costs can spiral out of control for services whose playlists fail to comply as "non-interactive."

The Echo Nest's Playlisting Engine

The Echo Nest's playlisting engine brings an unprecedented understanding of music content (how the music sounds) and music culture (how the entire online world describes the music). The Echo Nest's playlist engine applies signal processing and machine listening to extract detailed, audio-based information about every song on the web, such as tempo, song structure, timbre and other attributes. The engine combines that musical understanding with natural language processing to understand the world-wide online conversation about every artist, album and song.

Using this comprehensive understanding of music, The Echo Nest Advanced Playlisting can build flexible playlists based on any customer's specifications, ensuring each implementation is unique. Playlists and online radio stations can be created based on mood, instrumentation, style, lyrics, timbre, tempo, energy, artistic influences, emotional arc and other attributes.

Powerful, Multifaceted Song Selection: Listeners can start with a seed artist, song or a user's taste profile to create and tailor playlists based on these datasets from The Echo Nest, applicable **to over sixteen million songs.** Users can set the following attributes to create a playlist, or tweak them to steer a station in real time:

- *Audio Attributes* specify the tempo, danceability and energy (for example, "base a playlist around my favorite songs that includes only upbeat, workout-friendly tracks").

- *Hotttnesss* controls playlists based on the online popularity of artists or tracks ("create a playlist based on The White Stripes, but only play the songs people are talking about online right now").
- *Familiarity* selects music based on artists' familiarity with the public ("play artists similar to The White Stripes but only include the ones I've never heard of before").
- *Location* creates playlists and radio stations limited to artists from a specific location ("play me NYC-based bands that sound like the White Stripes").
- *Style/Genre* generates playlists and radio stations around nearly any style or genre. This goes way beyond the usual 15 static tags that other services apply to artists over the duration of their careers, These dynamic music tags change as the artist changes through time. (For example, "play me all Jamaican Rock Steady music that people have described as 'upbeat.'")
- *Era* limits playlists and radio to certain years, either in general or for a particular artist ("play me Neil Young songs from his experimental '80s phase").

Personalized, Scalable Playlists

Services can customize The Echo Nest Advanced Playlisting's features to each listener's taste, simplifying the process of creating playlists or streaming radio stations and greatly increasing their ability to create lists users will love. The Echo Nest's Personal Catalog service is a fully-hosted, user-profiling web service that tracks users' likes and dislikes as they use the service. This allows it to build a nuanced, unique, and scalable music preference profile for each user that, unlike other ratings systems, takes advantage of the other factors above.

Reducing music licensing costs

On-demand music streaming services pay a high royalty fee for each track played to each user. The Echo Nest Advanced Playlisting technology can reduce licensing costs by converting music streams to "non-interactive," DMCA-compliant programming with no perceptible degradation of the user experience, allowing streaming services to qualify for lower, non-interactive licensing rates.

About The Echo Nest

The Echo Nest is a music intelligence company that connects the greatest application developers to the best data and music to enable the next generation of music experiences. Powered by the world's only machine learning system that actively reads about and listens to music everywhere on the web, The Echo Nest opens up a massive repository of dynamic music data to application developers ranging from one-person operations to multinational corporations. The Echo Nest's customers reach over 100,000,000 music fans every month and include leading music companies such as MOG, Thumbplay, MTV, Rhapsody and the BBC. Over 160 music applications have been built on The Echo Nest platform to date.

The Echo Nest was co-founded by two MIT Media Lab PhDs. Winner of three National Science Foundation SBIR grants, The Echo Nest's investors include Matrix Partners and Commonwealth Capital Ventures, Argos Management and three co-founders of MIT Media Lab. For more information, visit echonest.com or follow The Echo Nest on Twitter @echonest.