Large scale music understanding

Brian Whitman
Founder & CTO, The Echo
It's easy to stay updated on any @bwhitman.

follow bwhitman to 40404 in the United States
Codes for other countries

Name Brian Whitman
Location Cambridge MA, USA
Web http://notes.vari...
Bio teach computers to listen to music. co-founder of the blah blah
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<thead>
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<th>Filesize</th>
<th>Bitrate</th>
<th>Frequency</th>
<th>Length</th>
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</tr>
</tbody>
</table>
Or try searching **Black Diamond Heavies** next »

After searching for Sugarplastic another user searched for black diamond heavies, want to try it?
listeners who enjoyed this song also liked:

- The End by Laura Jansen
- Ask Me A Question by minipop
- Nattöppet by Detektivbyrå
- Harold T. Wilkins by Fanfarlo
- The Times by Verbal and The Kickdrums
- Your Surrender by Temple Scene
- Home Sweet Home by Detektivbyrå
- Dansbanan by Detektivbyrå
- Lyckans Undulat by Detektivbyrå
- E18 by Detektivbyrå
- Neonland by Detektivbyrå
- Om Du Möter Varg by Detektivbyrå
Artist: Aaron Neville
Album: Tell It Like It Is [Aim]

Tubular Bells I (Full Album)
Artist: Mike Oldfield

Boo Hoo
Artist: Bert Kaempfert

Der Gnom
Artist: Mussorgsky, Modest Peter

A Lovely Way To Spend An...
Artist: Engelbert Humperdinck
Album: Red Sails in the Sunset
MIT Media Lab
finishing my dissertation
Hit prediction
Taste / recommendation
Automated composition
Classification, tagging
Feature extraction (key, tempo)
Search & retrieval
You probably know Keith Fullerton Whitman as breakcore maven Hrvatski, a man who played in a few bands before developing an obsession with Squarepusher and deciding to probe the most hectic beats possible on labels such as Planet µ and his own Reckankreuzung, as well as falling into the Tigerbeat6 orbit. You also may know Hrvatski by his pithy electronic music write-ups for the Forced Exposure website, penned while he worked in sales for the revered distributor. But the Keith Fullerton Whitman of Playthroughs has kept a lower profile. Starting last year with the 21:30 for Acoustic Guitar EP, Whitman began experimenting with subtle music based on laptop-processed guitar tones. While he’s tinkered with this approach here and there, Playthroughs is his first sustained exploration of quiet sound.

If you’ve listened to the more drone-focused side of electronic music in the last few years, you’ve definitely heard the core elements that make up Playthroughs. There is no radical breakthrough in texture here, nothing to make you turn your head and say, "What the hell was that?" Playthroughs consists entirely of processed guitar, but the tones are light on harmonics, with many possessing an almost sine wave-level of clarity. As the thin drones hang in the air and shift this way and that, they harmonize with other drones and find themselves poked with fuzzy implements of static. Nothing terribly earth-shattering about this composition method.

It’s true that much of Playthroughs seems familiar on the surface, but I don’t think it an exaggeration to say that this record essentially perfects this particular style of music. It’s an album of meticulous balance, Zen focus, and tiny gestures that carry great force, where each individual piece of sound is carefully placed to maximize impact. The first 3½ minutes of "feedback zwei", for example, consists of overlapping blankets of clean, piercing electronic feedback that remain in constant motion, creating new harmonic patterns with each passing second. And an unexpected cloud of pink noise slowly envelops the sound field, bathing the
<table>
<thead>
<tr>
<th>Set A</th>
<th>Set B</th>
<th>Set C</th>
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</thead>
<tbody>
<tr>
<td>Britney Spears</td>
<td>Alice in Chains</td>
<td>Chris Isaak</td>
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<tr>
<td>Backstreet Boys</td>
<td>Korn</td>
<td>Bob Dylan</td>
</tr>
<tr>
<td>Christina Aguilera</td>
<td>Faith no More</td>
<td>Crowded House</td>
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</tbody>
</table>
Open iTunes and select the songs whose sadness you wish to catalog. They can be on an iPod or in your library. When you have selected your target songs, come back to this dialog and click the "Detect Sadness" button below.

- Add detected songs to their respective sad / not sad playlists

You can also create Smart Playlists involving sadness by selecting Grouping fields containing SDx (for sad songs) and SDy (for not sad songs.) See the documentation for more information.

Please note: I may append to some of the grouping tags on your music. This is normally not a problem, but if you are worried please run sadness detection on a few songs to see what happens.

I don't currently have a sadness model.
The Echo Nest 2007
Somerville, MA USA
2 people
2 computers
Lots of ideas
1,000,000 documents
10,000 artists
100,000 songs
0 public facing site
The Echo Nest
2010
Somerville, MA USA
30 people
200 computers
Lots of products
5,000,000,000 documents
1,200,000 artists
20,000,000 songs
0 public facing sites
Give (and sell) great data to everyone.

now everything about music and listeners,
it automatically with no bias, on everything.

Know everything about music and listeners.

"Give (and sell) great data to everyone."
Audio features:
- musical features, Jehan ’05++
- publicly available, ~10s / song on cloud

Audio features:
- audio spectrogram
- pitch features
- timbre features
- beat markers
- tempogram
- tempo spectrum

Audio features:
- musical features, Jehan ’05++
- publicly available, ~10s / song on cloud

Audio features:
- audio spectrogram
- pitch features
- timbre features
- beat markers
- tempogram
- tempo spectrum

Audio features:
- musical features, Jehan ’05++
- publicly available, ~10s / song on cloud

Audio features:
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- pitch features
- timbre features
- beat markers
- tempogram
- tempo spectrum

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- musical features, Jehan ’05++
- publicly available, ~10s / song on cloud

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- pitch features
- timbre features
- beat markers
- tempogram
- tempo spectrum

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- musical features, Jehan ’05++
- publicly available, ~10s / song on cloud

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- pitch features
- timbre features
- beat markers
- tempogram
- tempo spectrum

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- musical features, Jehan ’05++
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Audio features:
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- pitch features
- timbre features
- beat markers
- tempogram
- tempo spectrum

Audio features:
- musical features, Jehan ’05++
- publicly available, ~10s / song on cloud

Audio features:
- audio spectrogram
- pitch features
- timbre features
- beat markers
- tempogram
- tempo spectrum

Audio features:
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- publicly available, ~10s / song on cloud

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Audio features:
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- pitch features
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- beat markers
- tempogram
- tempo spectrum

Audio features:
- musical features, Jehan ’05++
- publicly available, ~10s / song on cloud

Audio features:
- audio spectrogram
- pitch features
- timbre features
- beat markers
- tempogram
- tempo spectrum
ext features:

“community metadata” Whitman ’02++
web crawls, blogs, reviews, news: “top terms

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<th>Score</th>
<th>n2 Term</th>
<th>Score</th>
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<th>Score</th>
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<td>0.0377</td>
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Explicit categories, tags, similars from partners
Physical sales data
Other ontologies
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<td>Pandora</td>
<td>The Echo Nest</td>
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<td>1 day</td>
<td>&lt;1 minute</td>
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<td>$0.001</td>
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IT'S DANGEROUS TO GO ALONE! TAKE THIS.
Playlist API Methods

Api calls for generating playlists

static

Returns a static playlist. A static playlist is generated once from an initial set of parameters, and returns an ordered list of songs.

Some properties of a static playlist:

- Songs are never repeated
- Artists may be repeated

A number of different algorithms can be used to select songs for the playlist. These are specified by the type parameter.

<table>
<thead>
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<th>Parameter</th>
<th>Required?</th>
<th>Multiple?</th>
<th>Values</th>
<th>Description</th>
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<td>no</td>
<td>N6E4NIOVYMTNDMM8J</td>
<td>your API key</td>
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<td>no</td>
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<td>no</td>
<td>artist, artist-radio, artist-description</td>
<td>the type of the playlist that will be generated</td>
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</tbody>
</table>
Play Summary

Genres

Deep House

Tech House

House

BPM 133

The National
2 things to remember:
2 things to remember:

- Be cautious what you believe a computer can do.
2 things to remember:

(1) be cautious what you believe a computer can do

(2) but data is one future of music
the echo nest