



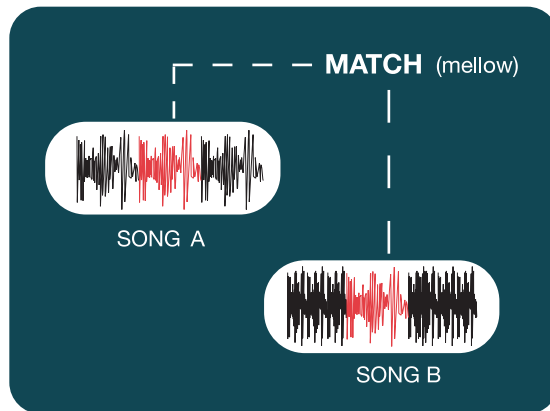
Designing A Social Game to Tag Music

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**Human Computation Workshop
June 28, 2009**

How to automatically tag millions of songs....

A Machine That Learns



← **thousands of
human-tagged songs**

Social Gaming

Click the bubble that describes this song

francois
sanjay
alan

john
dave
mary
peter

SMOOTH

MELLOW

50 points

↓ **millions of
machine-tagged songs**

lively, funky party music with a horn section

SEARCH

Onyonghasayo by *Skankin Pickle*

September by *Earth Wind And Fire*

Give It Up Or Turn it Loose by *James Brown*

→ **hundreds of
mis-tagged songs**

Semantic Music Understanding

Give It Away
Red Hot Chili Peppers

Send to Friend

Composed By
Flea/John Frusciante/Anthony Kiedis/Chad Smith

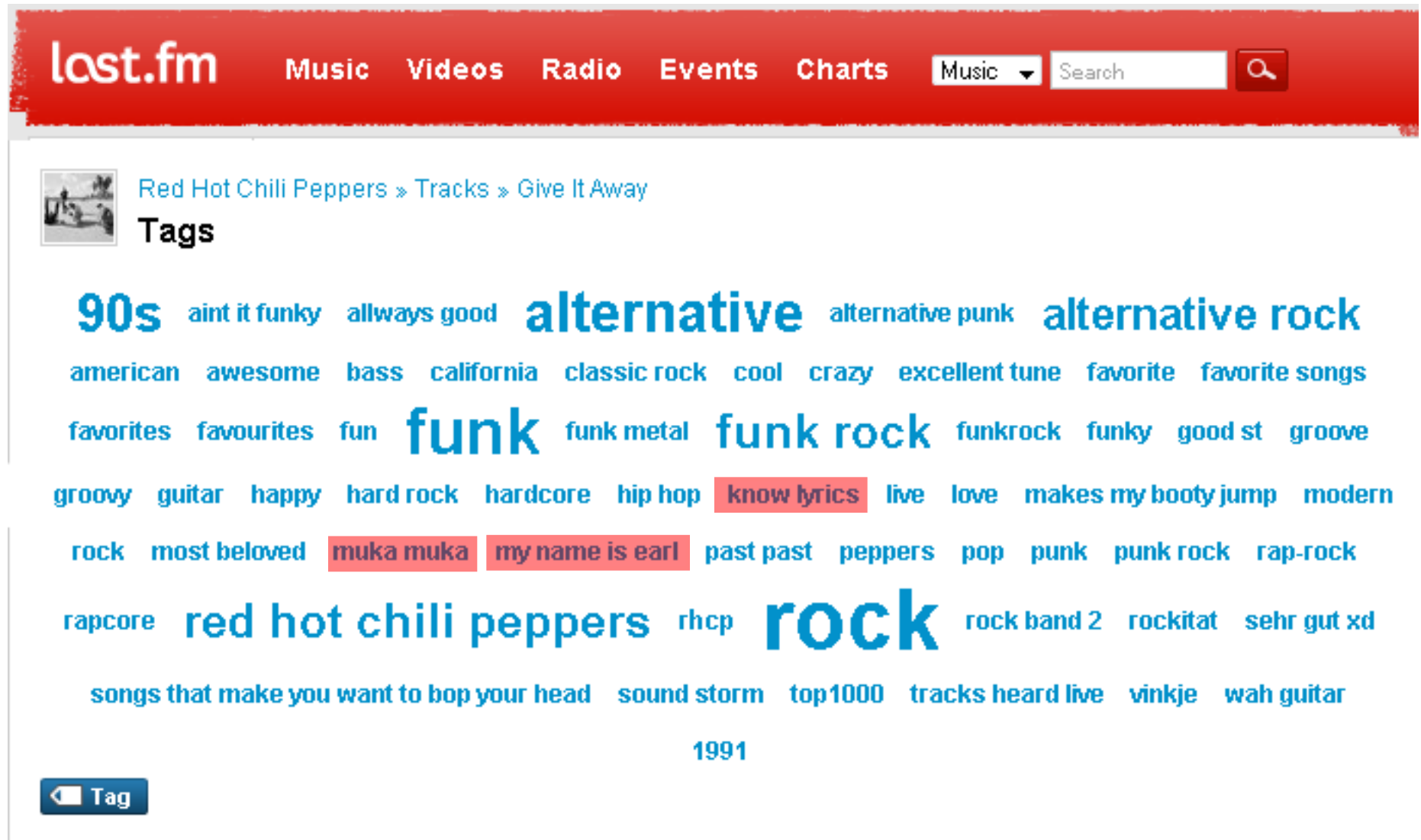
Other Links
All Performers that have performed this Title

Song Review by Steve Huey

The first single off the Red Hot Chili Peppers' quadruple-platinum smash *Blood Sugar Sex Magik*, "Give It Away" didn't achieve the massive pop success of its follow-up, "Under the Bridge," barely peaking in the Top 75, but it did become one of the band's most instantly recognizable songs, thanks mostly to Anthony Kiedis' nonsensical raps, Flea's jumping, sliding, popping bass line, and Pete Weiss' jew's-harp boinging away in the background; plus, MTV jumped all over the visually distinctive video, which featured the scantily clad bandmembers cavorting in the desert wearing silver body paint. Kiedis' lyrics were a free-associative mixture of positive vibes, tributes to musical heroes, and free love, and their literal meaning was often as difficult to understand as Kiedis' nasal, staccato enunciation. But that distinctive vocal style helped make the most comprehensible lines even catchier and more memorable, greatly enhancing the song's appeal. John Frusciante's guitar should not be underappreciated either, his noisy, scratchy funk-rock work adding depth and texture to the powerhouse rhythm section of Flea and Chad Smith. Frusciante also adds the song's two most unpredictable change-ups: a sudden contrast to Kiedis' hyperactivity in the form of a languid solo pre-recorded and dubbed backwards over the rhythm track, and a hard-rocking riff which is not introduced until the song's outro and bears a more than suspicious resemblance to Black Sabbath's "Sweet Leaf." Funky and hard-rocking, horny and cheerfully loopy all at the same time, "Give It Away" stands as one of the Chili Peppers' best singles, and a landmark single in relation to popular acceptance of funk-metal.

source: <http://allmusic.com/cg/amg.dll?p=amg&sql=33:azfqxxlsld0e>

Social Tags



last.fm Music Videos Radio Events Charts Music Search

Red Hot Chili Peppers » Tracks » Give It Away

Tags

90s aint it funky allways good **alternative** alternative punk **alternative rock**
american awesome bass california classic rock cool crazy excellent tune favorite favorite songs
favorites favourites fun **funk** funk metal **funk rock** funkrock funky good st groove
groovy guitar happy hard rock hardcore hip hop **know lyrics** live love makes my booty jump modern
rock most beloved **muka muka** **my name is earl** past past peppers pop punk punk rock rap-rock
rapcore **red hot chili peppers** rhcp **rock** rock band 2 rockitat sehr gut xd
songs that make you want to bop your head sound storm top1000 tracks heard live vinkje wah guitar

1991

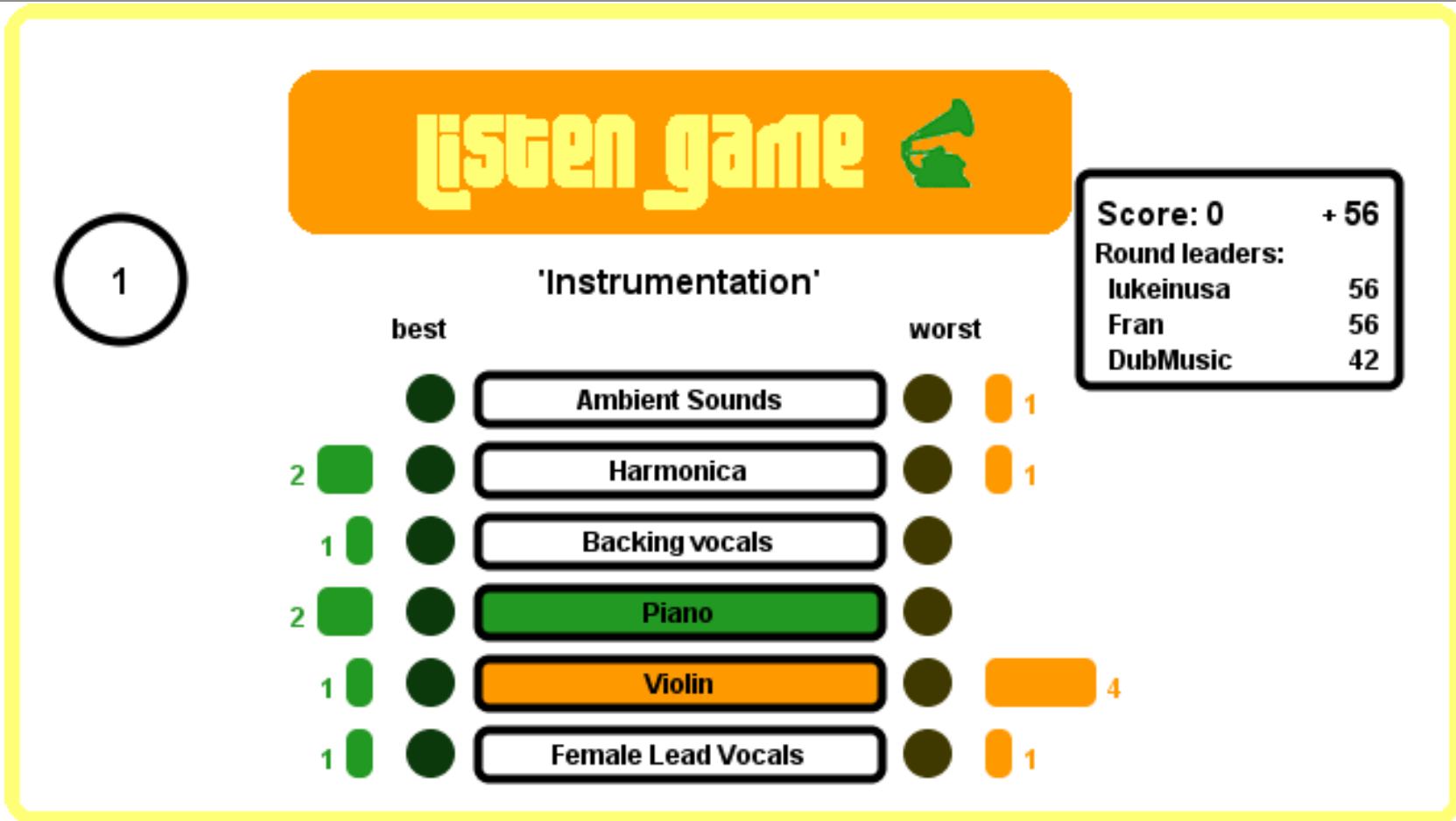
Tag

source: http://www.last.fm/music/Red+Hot+Chili+Peppers/_/Give+It+Away/+tags

- ✓ Cheap, rich annotations for popular songs
- ✗ Noisy, the long-tail is poorly represented

INSTRUMENTATION									
Which instruments are present, are prominent, or are featured in a solo.									
Instrument	None	Uncertain	Present	Prominent	Solo		Instrument	None	Uncertain
Voice							- String Ensemble	<input type="radio"/>	<input type="radio"/>
- Male Lead Vocals	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="checkbox"/>		- Orchestra	<input type="radio"/>	<input type="radio"/>
- Female Lead Vocals	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="checkbox"/>		Wind Instruments		
- Backing vocals	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="checkbox"/>		- Harmonica	<input type="radio"/>	<input type="radio"/>
- Choir	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="checkbox"/>		- Trumpet	<input type="radio"/>	<input type="radio"/>
Guitar Family							- Trombone	<input type="radio"/>	<input type="radio"/>
- Acoustic Guitar	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="checkbox"/>		- Saxophone	<input type="radio"/>	<input type="radio"/>
- Electric Guitar (clean)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="checkbox"/>		- Horn Section	<input type="radio"/>	<input type="radio"/>
- Electric Guitar (distorted)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="checkbox"/>		Electronics		
- Slide Guitar	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="checkbox"/>		- Samples	<input type="radio"/>	<input type="radio"/>
- Bass	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="checkbox"/>		- Ambient Sounds	<input type="radio"/>	<input type="radio"/>
- Banjo	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="checkbox"/>		- Scratches	<input type="radio"/>	<input type="radio"/>
Keyboards							- Sequencer	<input type="radio"/>	<input type="radio"/>
- Piano	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="checkbox"/>		Percussion		

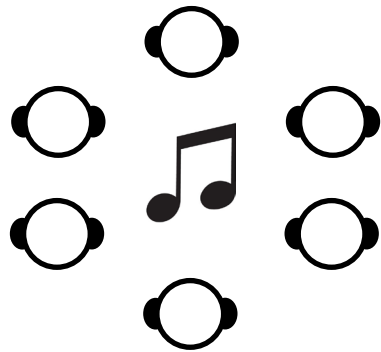
- ✓ Reliable, precise, tailored to application
- ✗ Expensive, laborious, not scalable



	ROC area
Pilot Study: 590 players 30,000 song-tag pairs	0.61
Mine AllMusic.com Pay human labellers	0.70
ListenGame pilot data	0.66

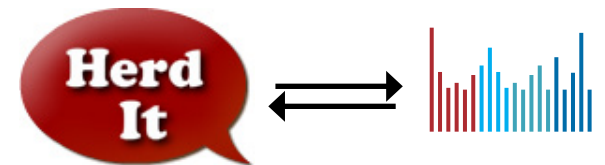
- ✓ Precise, large-scale data that works
- ✗ Needs to be fun to attract players!

User-centered design process



Music game with a social context

Human computation game is integrated with a machine learning application





facebook Home Profile Friends Inbox 9

Your Rank 11 / 11

SONG ROUNDS

Luke 0

What adjective describes this song?

electronic quirky acoustic

slow catchy cool

100%
50%
0%
agree-O-meter

Top 5 Scorers

- 30 Steven
- 30 Greg
- 30 Liz
- 30 Shaun
- 30 Sarah

TIMER

CHAT

Luke: I love this song!

Signal Processing
Machine Learning
+ Human Computation
= Music Search Engine

A computer audition system that can *listen to* and *understand* music, powering simple and accurate discovery of the millions of songs in music's long tail.

The House Carpenter by Clarence Ashley

Drinker's Peace by Guided by Voices

The House Carpenter by Clarence Ashley

Jagermeister Pie by Beck

Ants Marching by Dave Matthews Band



Clarence Ashley

song description:

This bluegrass song also has a blues style. It feels not exciting and not angry / aggressive. It features male lead vocals, banjo, and string ensemble. It is a song low quality recording and low energy that you might like listen to while going to sleep.