



# Music Research at Google

Douglas Eck  
Research Scientist  
Google Research, Mountain View



## Team members

- Dick Lyon
- **Ron Weiss**
- **Kevin Wilson**
- Ryan Rifkin
- **Sourish Chadhuri**
- Pascal Getreuer

Machine Hearing team (audio)

- **Doug Eck**
- **Daniel Steinberg**
- Andre Hentz
- **Tony Lam**
- **Philippe Hamel**
- **Ali Razavi**
- **Maneesh Bhand**
- Alex Susemihl (intern)

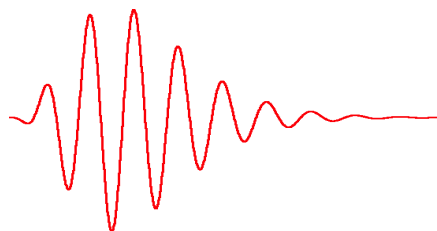
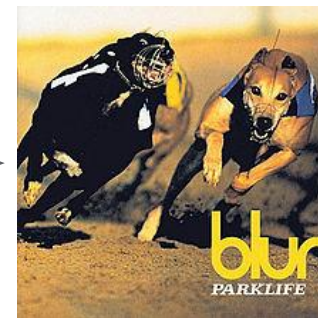
Music Intelligence team (music)

Names in **BOLD**  
are here at  
NEMISIG!



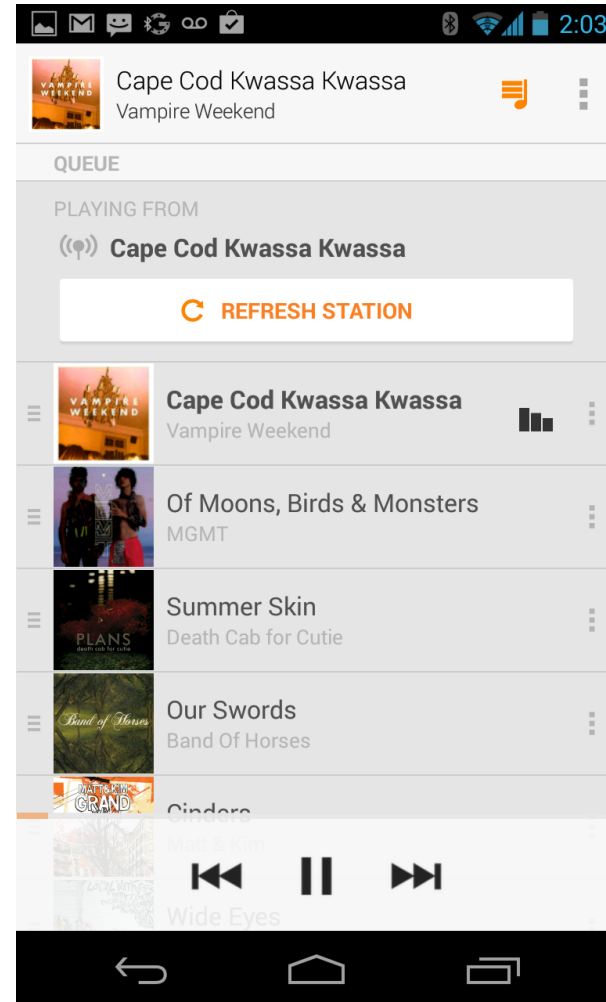
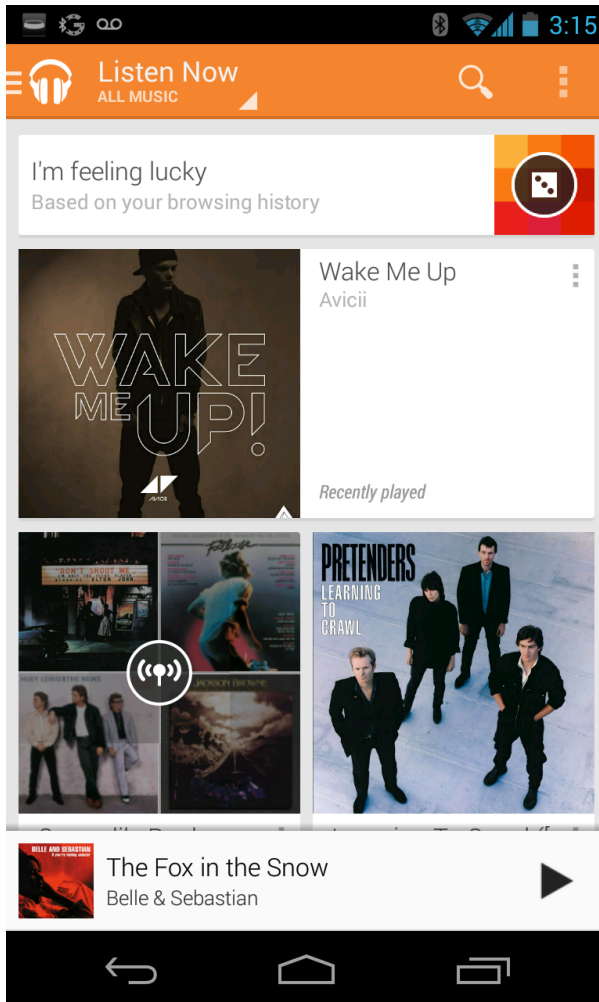
Users  
*Collaborative Filtering*

Musicians  
*Knowledge and Connections*

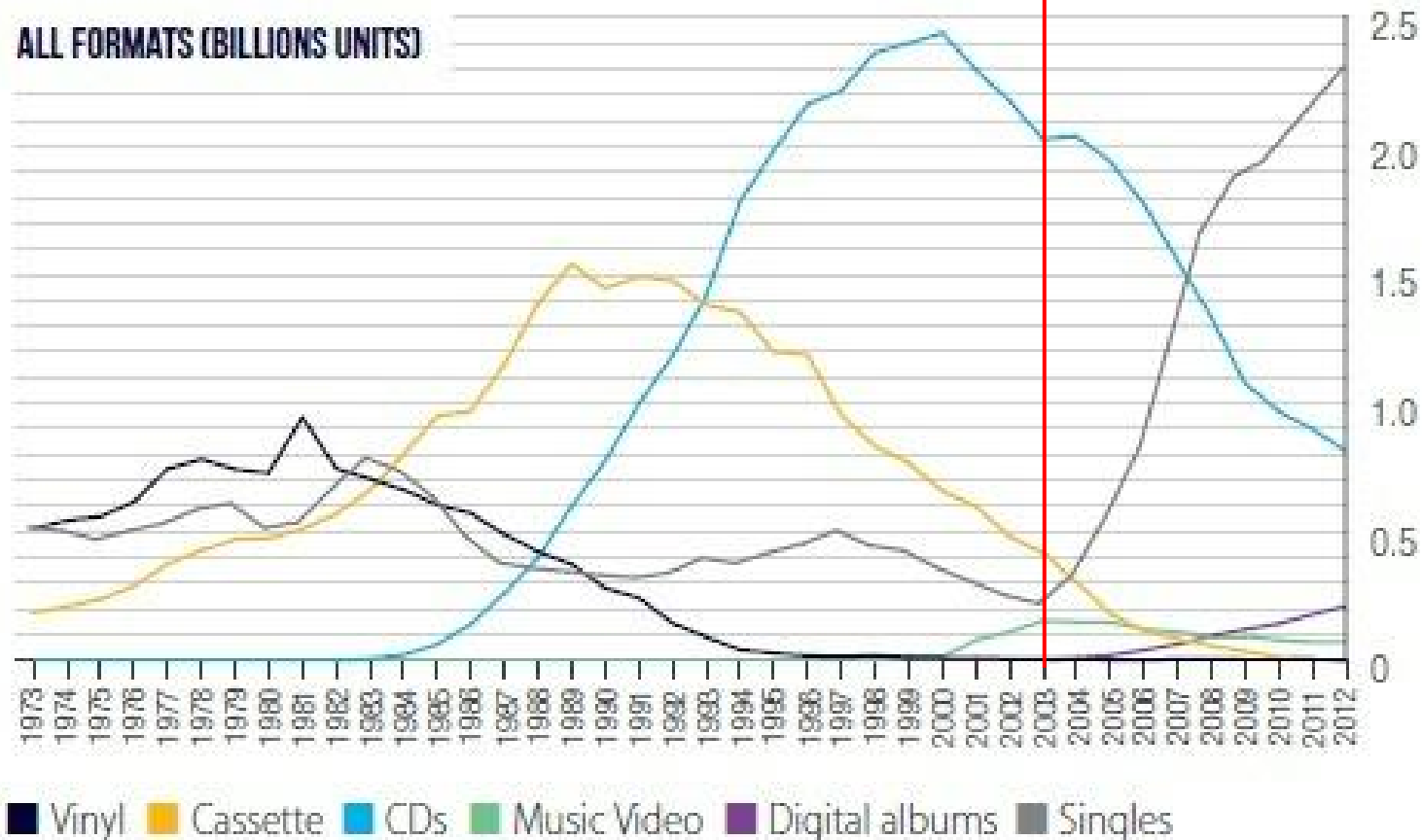


Music  
*Audio Signal Processing*

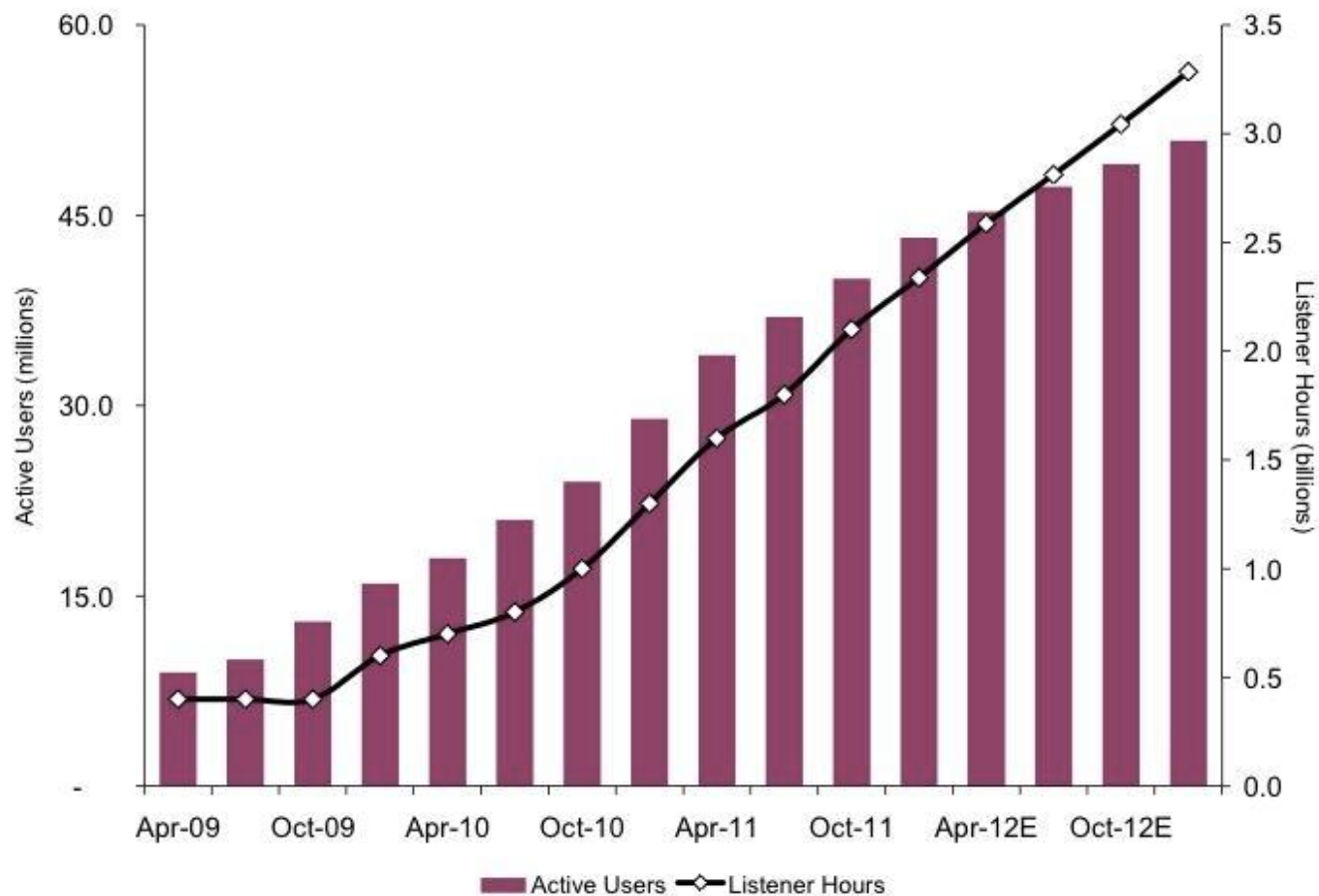
# Play Music All Access



Q: What do music user want?



## Pandora Listener Hours and Active Users



## Pandora streaming statistics

	<u>FY3Q12</u>	<u>FY3Q11</u>
Listener Hours (billions)	2.1	1.0
Active Users (millions)	40.0	24.0
<u>Platform Hours</u>		
Mobile	70%	52%
Non-mobile	30%	48%

## iPod, iPhone and iPad

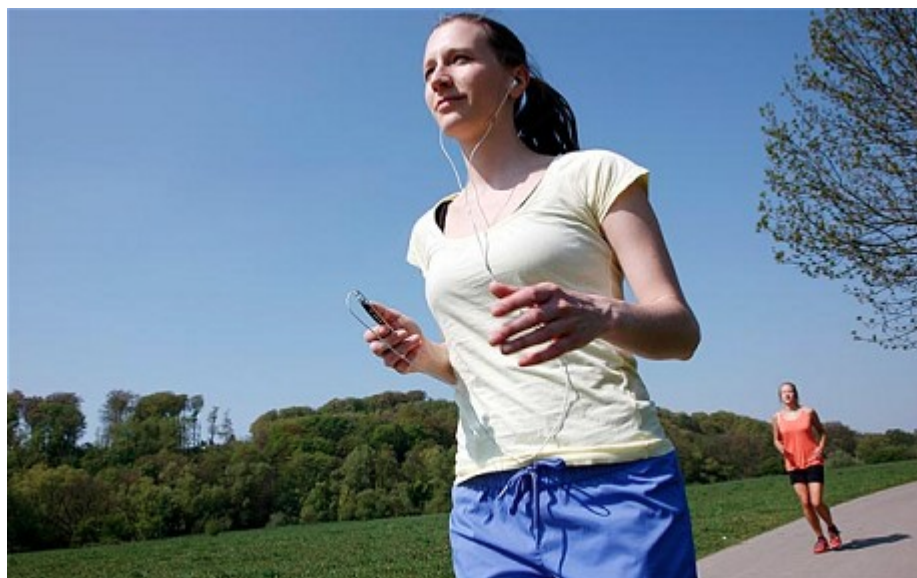
### Quarterly sales



## Music Recommendation

Personalized, contextual radio that  
adapts to listener feedback. Low-  
friction, easy engagement

“Lean Back” experience

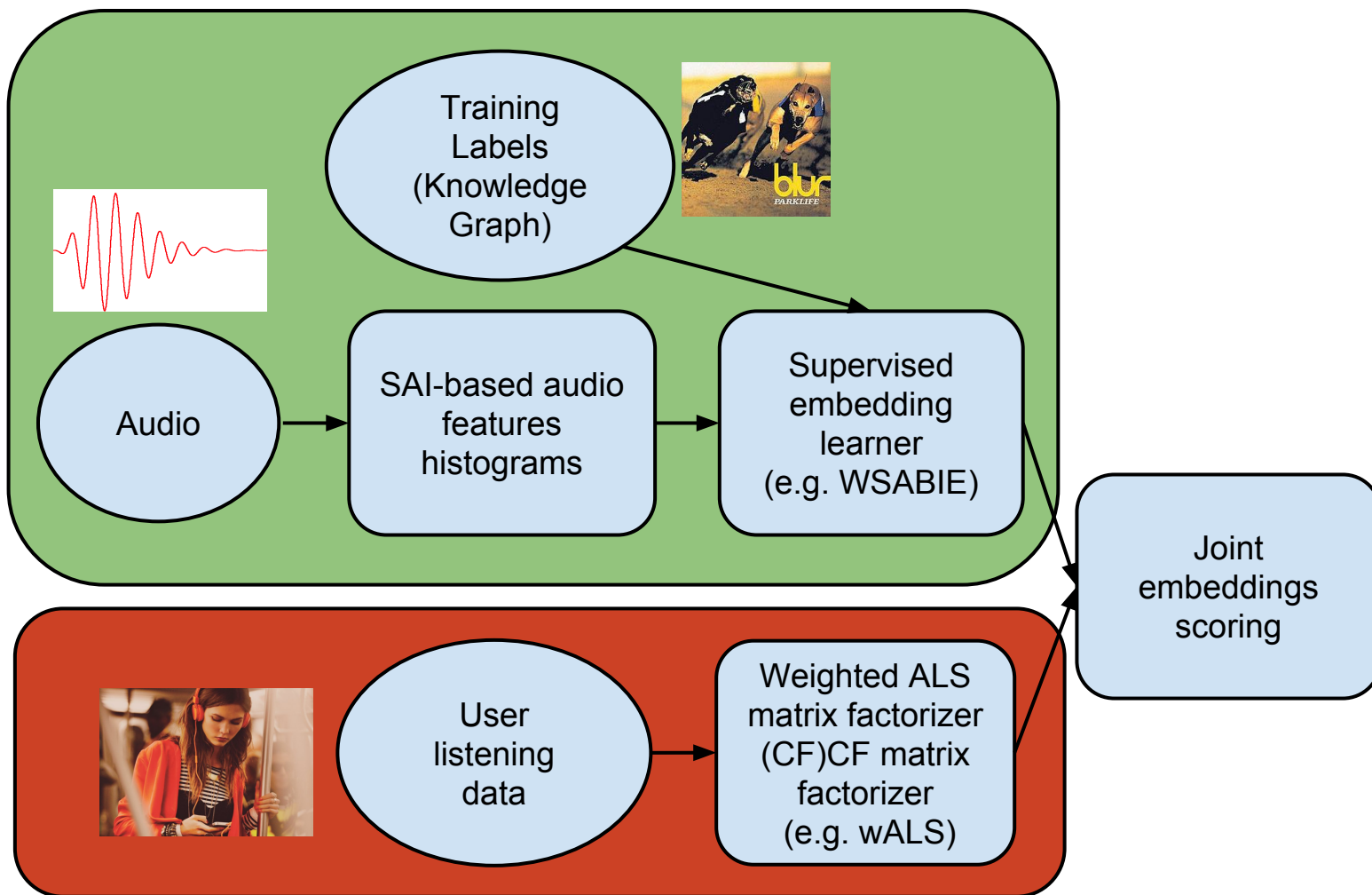


## Music Discovery

Organize the world's music information. Tools for exploration, sharing and visualization. Social.

“Lean Forward” Experience





# Knowledge and Connections



## Gorillaz

Band

Gorillaz are an English musical and visual project created in 1998 by Damon Albarn and Jamie Hewlett. The project consists of Gorillaz itself and an extensive fictional universe depicting a "virtual band" of cartoon characters. [Wikipedia](#)

**Members:** [Damon Albarn](#), [Jamie Hewlett](#), [More](#)

**Awards:** Grammy Award for Best Pop Collaboration with Vocals, [More](#)

**Origin:** [London](#), [United Kingdom](#), [Essex](#), [United Kingdom](#)

**Record labels:** [Universal Music Group](#), [EMI](#), [Geffen Records](#), [Virgin Records](#), [Parlophone](#), [Def Jam Recordings](#)

[More images](#)






## Songs

<a href="#">Clint Eastwood</a>	2001	<a href="#">Gorillaz</a>
<a href="#">Feel Good Inc.</a>	2005	<a href="#">Demon Days</a>
<a href="#">Dirty Harry</a>	2005	<a href="#">Demon Days</a>
<a href="#">19/2000</a>		
<a href="#">On Melancholy Hill</a>	2010	<a href="#">Plastic Beach</a>

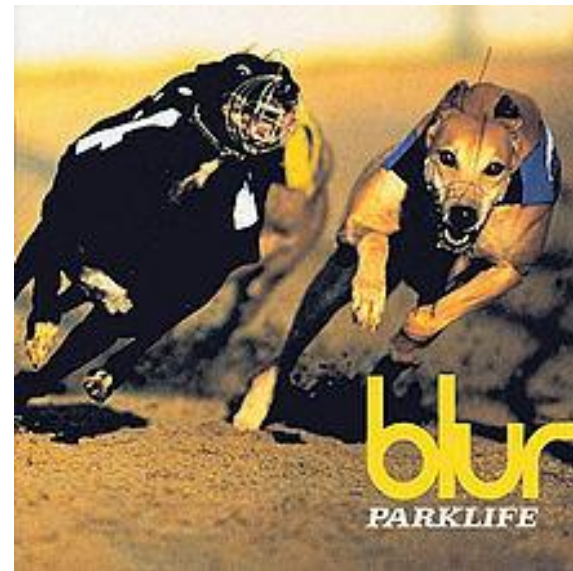
## Albums

				
<a href="#">Plastic Beach</a> 2010	<a href="#">Demon Days</a> 2005	<a href="#">Gorillaz</a> 2001	<a href="#">The Fall</a> 2010	<a href="#">The Singles Collectio...</a> 2011

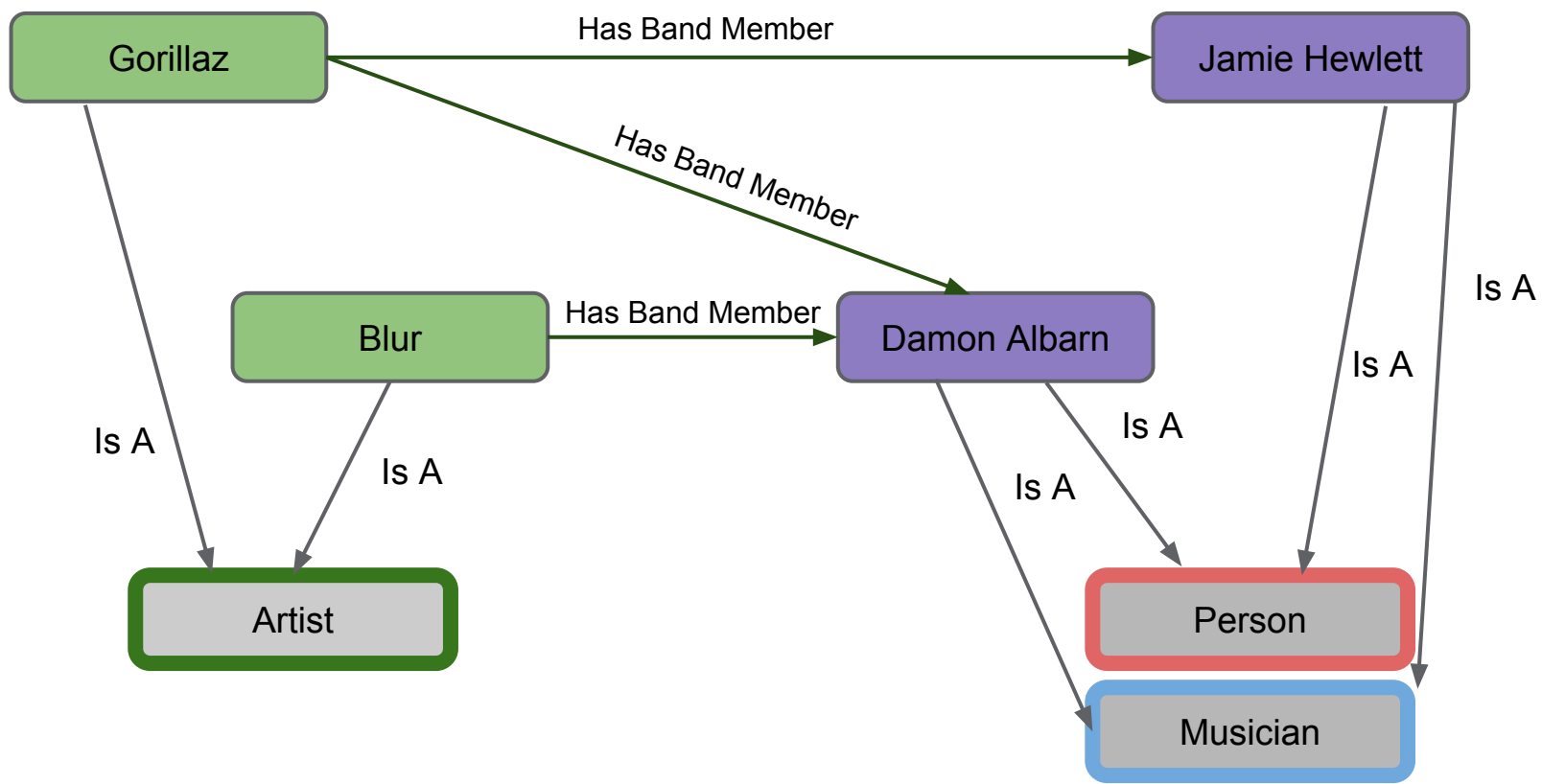
## People also search for

				
<a href="#">Noodle</a>	<a href="#">Murdoc Niccals</a>	<a href="#">2D</a>	<a href="#">Blur</a>	<a href="#">De La Soul</a>

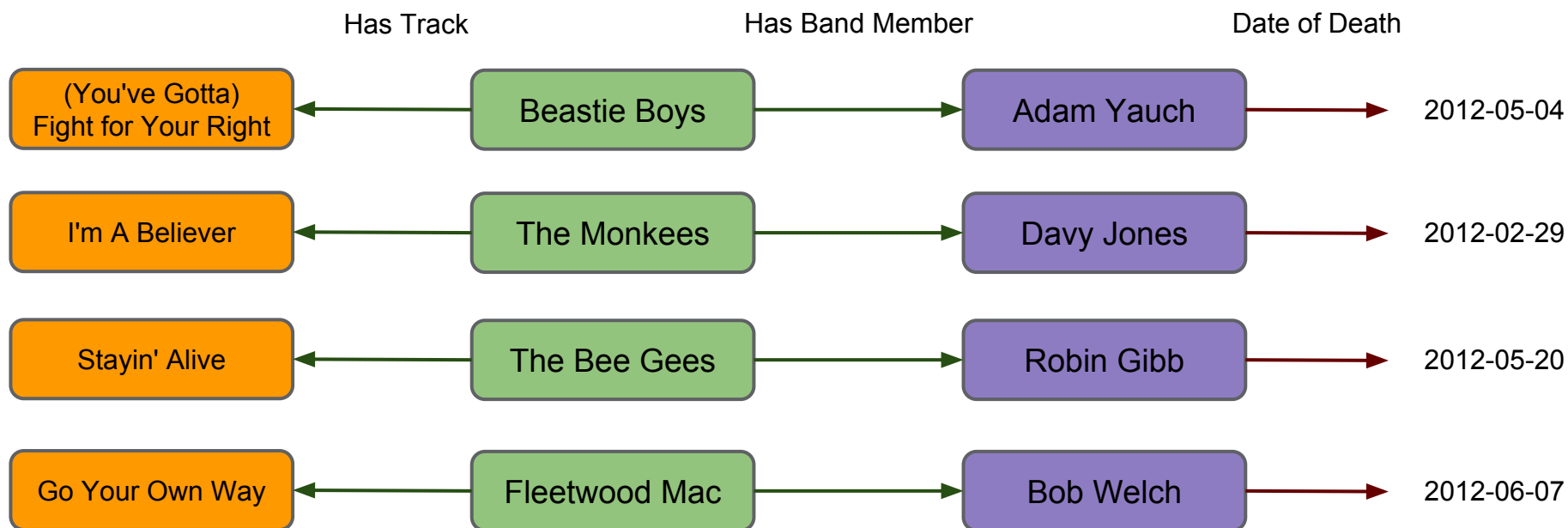
Knowledge Panel result from searching for "Gorillaz"



# Freebase Music Schema



# Playlist: Songs by Artists who had a member die in 2012



Freebase is a public dataset, so try it yourself!  
<http://tinyurl.com/bj4bkdv>

# MIR@Google

- Question: what can Google give back to the MIR community?
- Always hiring interns and full-time employees.  
Contact [deck@google.com](mailto:deck@google.com)
- Visiting faculty program
- Google Research Awards