



# Information Retrieval & Data Mining

Winter Semester 2015/16  
Saarland University, Saarbrücken



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**Adam  
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**Erdal  
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**Coordinators**

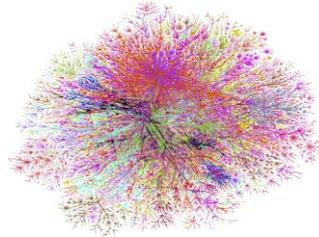
<https://www.mpi-inf.mpg.de/de/departments/databases-and-information-systems/teaching/winter-semester-201516/information-retrieval-and-data-mining/>

# Information Retrieval & Data Mining: What Is It All About?

**Information Retrieval** is ...

- **finding** relevant contents
- figuring out what users want
- ranking results to satisfy users

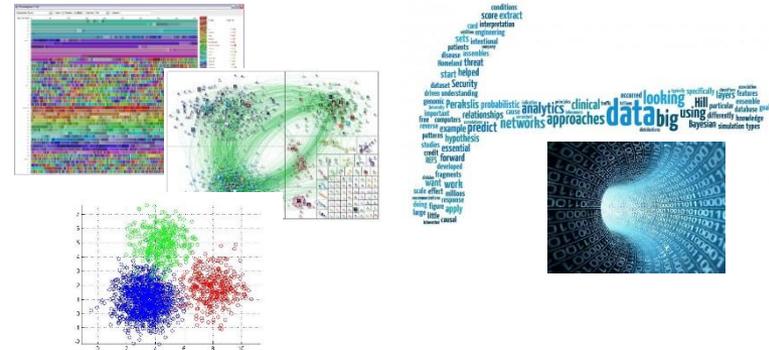
*... at Web scale*



**Data Mining** is ...

- **discovering** insight from data
- mining interesting patterns
- finding clusters and outliers

*... from complex data*



## Mutual benefits:

Mining needs to retrieve, filter, rank contents from Internet



Search benefits from analyzing user behavior data



# Organization

- **Lectures:**

Tuesday 14-16 in E1.3 Room 001 and Thursday 14-16 in E1.3 Room 002

Office hours of lecturers: appo

**Register for course and tutor group**

- **Assignments / Tutoring Groups:**

**at <http://tinyurl.com/irdm2015> !**

Tuesday 16-18

Thursday 16-18

Friday 14-16

Assignments given out in Thursday lecture, to be solved until next Thursday  
First assignment given out on Oct 22, solutions turned in on Oct 29  
First meetings of tutoring groups: Tue, Nov 3; Thu, Nov 5; Fri, Nov 6

- **Requirements for obtaining 9 credit points:**

- pass **2 out of 3 written tests** (ca. 60 min each)  
tentative dates: Thu, Nov 19; Thu, Dec 10; Thu, Feb 4
- pass **oral exam** (15-20 min), tentative dates: Mon-Tue, Feb 15-16
- must present **solutions to 3 exercises** (randomly chosen)
- up to **3 bonus points** possible in tests

# Outline of the IRDM Course

1. Motivation and Overview
2. Data Quality and Data Reduction
3. Basics from Probability Theory and Statistics

*Part I:  
Introduction &  
Foundations*

4. Patterns: Itemset and Rule Mining
5. Patterns by Clustering
6. Labeling by Supervised Classification
7. Sequences, Time-Series, Streams
8. Graphs: Social Networks, Recommender Systems
9. Anomaly Detection

*Part II:  
Data Mining*

10. Text Indexing and Similarity Search
11. Probabilistic/Statistical Ranking
12. Topic Models and Graph Models for Ranking
13. Information Extraction
14. Entity Linking and Semantic Search
15. Question Answering

*Part III:  
Information  
Retrieval*

# IRDM: Primary Textbooks

## Data Mining:

- Charu Aggarwal: „Data Mining: The Textbook“, Springer, 2015

## Information Retrieval:

- Stefan Büttcher, Charles Clarke, Gordon Cormack: “Information Retrieval: Implementing and Evaluating Search Engines”, MIT Press, 2010

## Foundations from Probability and Statistics:

- Larry Wasserman: „All of Statistics“, Springer, 2004

More books listed on IRDM web page and available in library:

[http://www.infomath-bib.de/tmp/vorlesungen/info-core\\_information-retrieval.html](http://www.infomath-bib.de/tmp/vorlesungen/info-core_information-retrieval.html)

Each unit of the IRDM lecture states relevant parts of book(s), and gives additional references

Within each unit, core material and advanced material are flagged



# IRDM Research Literature

important conferences on IR and DM

(see DBLP bibliography for full detail, <http://www.informatik.uni-trier.de/~ley/db/>)

SIGIR, WSDM, WWW, CIKM, KDD, ICDM, SDM, ICML, ECML

important journals on IR and DM

(see DBLP bibliography for full detail, <http://www.informatik.uni-trier.de/~ley/db/>)

TOIS, TWeb, InfRetr, JASIST, DAMI, TKDD, TODS, VLDBJ

performance evaluation initiatives / benchmarks:

- Text Retrieval Conference (TREC), <http://trec.nist.gov>
- Conference and Labs of the Evaluation Forum (CLEF),  
[www.clef-initiative.eu](http://www.clef-initiative.eu)
- KDD Cup, <http://www.kdnuggets.com/datasets/kddcup.html>  
and <http://www.sigkdd.org/kddcup/index.php>

# Chapter 1: Motivation and Overview

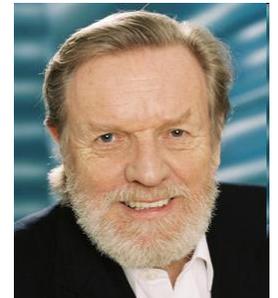
**1.1 Information Retrieval**

**1.2 Data Mining**



*„We are drowning in information,  
and starved for knowledge.“*

*-- John Naisbitt*



# 1.1 Information Retrieval (IR) ≈ Search Engine Technology

## Core functionality:

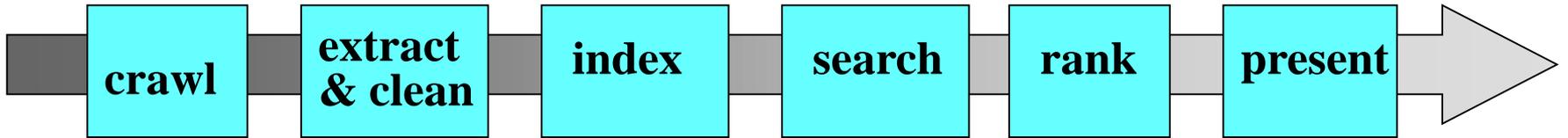
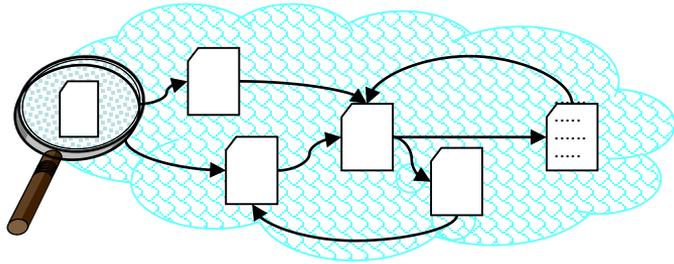
- **Match keywords** and multi-word phrases in documents:  
web pages, news articles, scholarly publications, books, patents,  
service requests, enterprise dossiers, social media posts, ...
- **Rank results** by (estimated) relevance based on:  
contents, authority, timeliness, localization, personalization, user context, ...
- Support interactive **exploration** of document collections
- Generate **recommendations** (implicit search)

.....

## Challenges:

- *Information Deluge*
- *Needles in Haystack*
- *Understanding the User*
- *Efficiency and Scale*

# Search Engine Architecture



handle dynamic pages, detect duplicates, detect spam

fast top-k queries, query logging, auto-completion

GUI, user guidance, personalization

strategies for crawl schedule and priority queue for crawl frontier

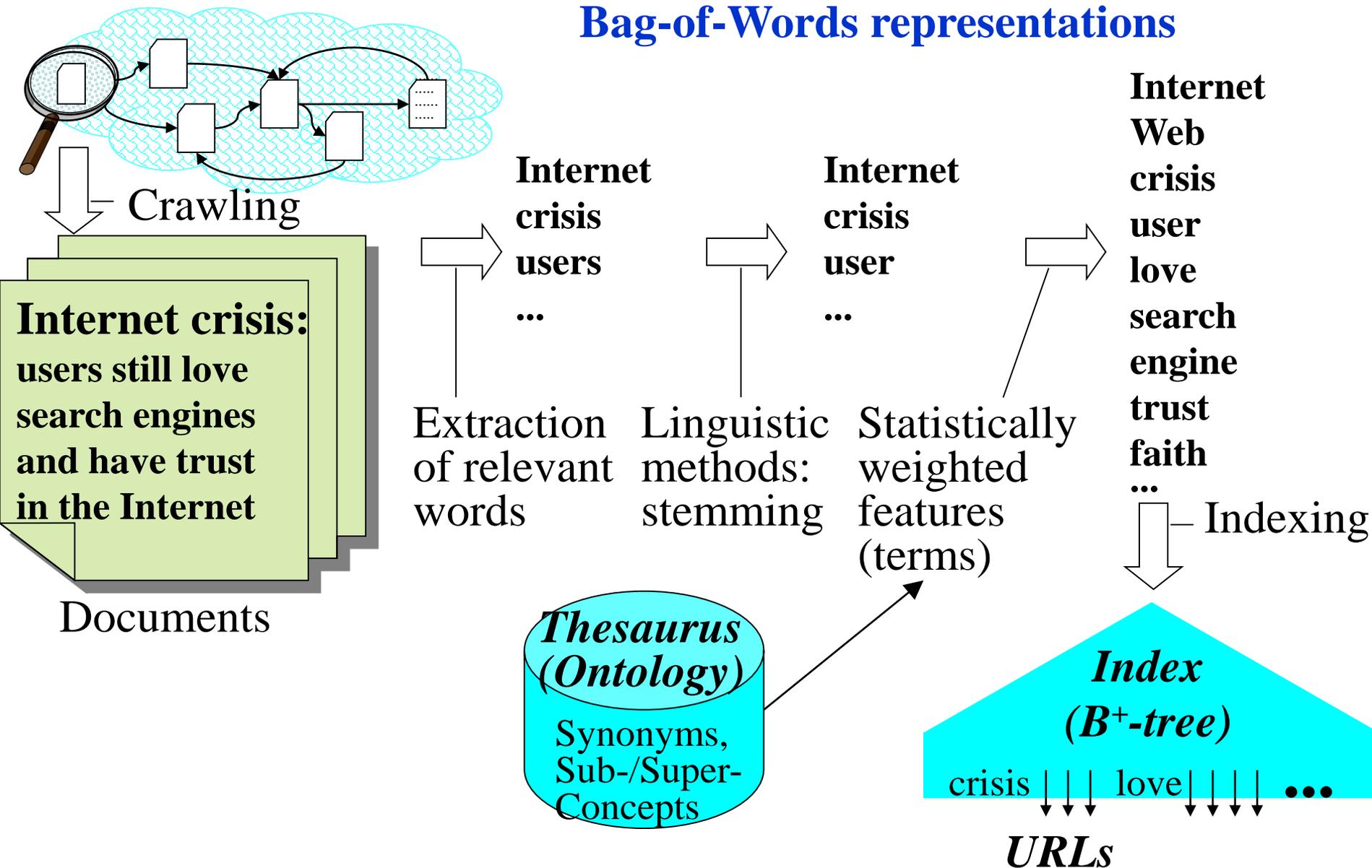
build and analyze Web graph, index all tokens or word stems

scoring function over many data and context criteria

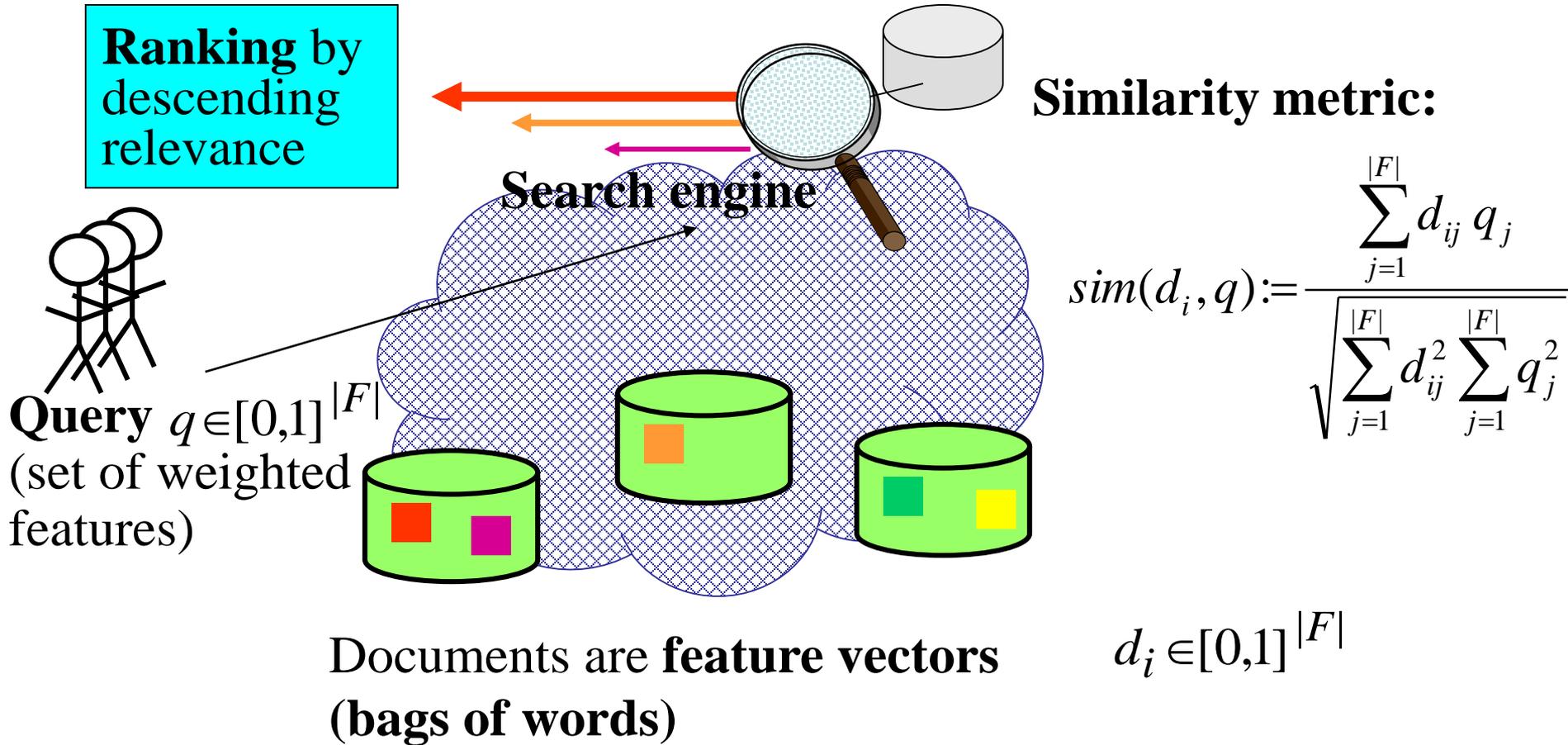
server farm with 100 000's of computers, distributed/replicated data in high-performance file system, massive parallelism for query processing

# Content Gathering and Indexing

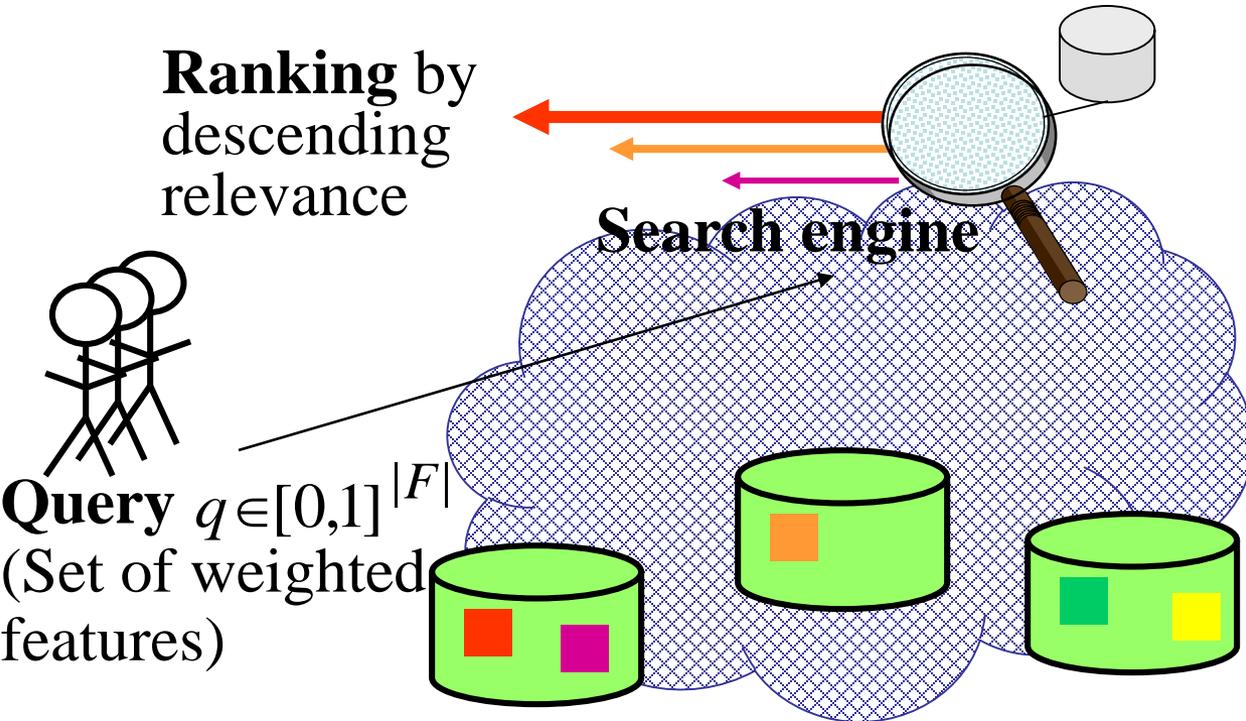
## Bag-of-Words representations



# Vector Space Model for Content Relevance Ranking



# Vector Space Model for Content Relevance Ranking



Similarity metric:

$$sim(d_i, q) := \frac{\sum_{j=1}^{|F|} d_{ij} q_j}{\sqrt{\sum_{j=1}^{|F|} d_{ij}^2 \sum_{j=1}^{|F|} q_j^2}}$$

Documents are feature vectors  $d_i \in [0,1]^{|F|}$   
(bags of words)

e.g., using:

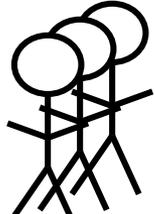
$$d_{ij} := w_{ij} / \sqrt{\sum_k w_{ik}^2}$$

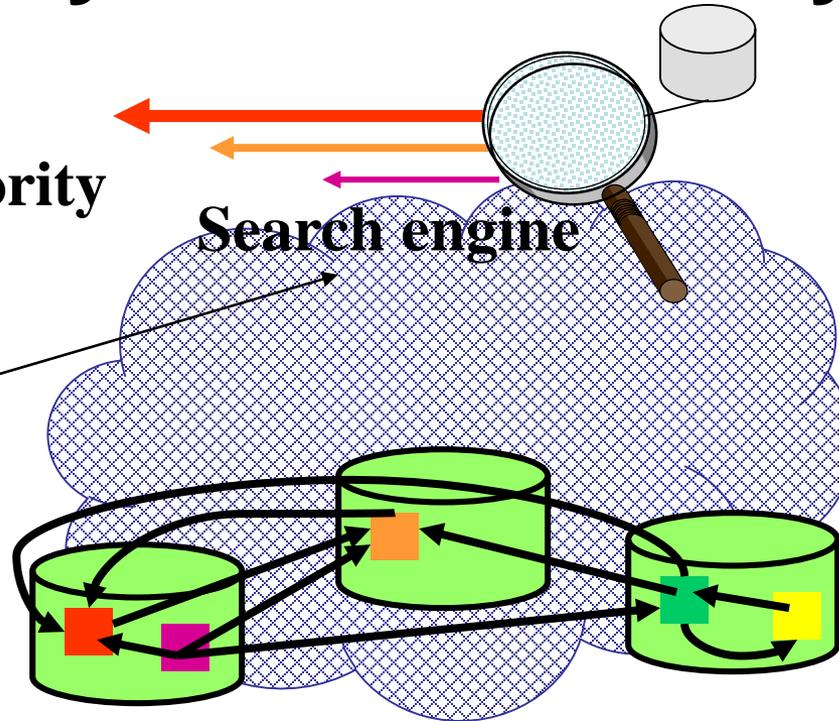
$$w_{ij} := \log \left( 1 + \frac{freq(f_j, d_i)}{\max_k freq(f_k, d_i)} \right) \log \frac{\# docs}{\# docs with f_j}$$

tf\*idf formula

# Link Analysis for Authority Ranking

Ranking by  
descending  
relevance & authority

 Query  $q \in [0,1]^{|F|}$   
(Set of weighted  
features)



+ Consider in-degree and out-degree of Web nodes:

**Authority Rank** ( $d_i$ ) :=

Stationary visit probability [ $d_i$ ]  
in random walk on the Web

Reconciliation of relevance and authority (and ...) by weighted sum

# Google's PageRank [Brin & Page 1998]

**Idea:** links are endorsements & increase page authority, authority higher if links come from high-authority pages

$$PR(q) = \varepsilon \cdot j(q) + (1 - \varepsilon) \cdot \sum_{p \in IN(q)} PR(p) \cdot t(p, q)$$

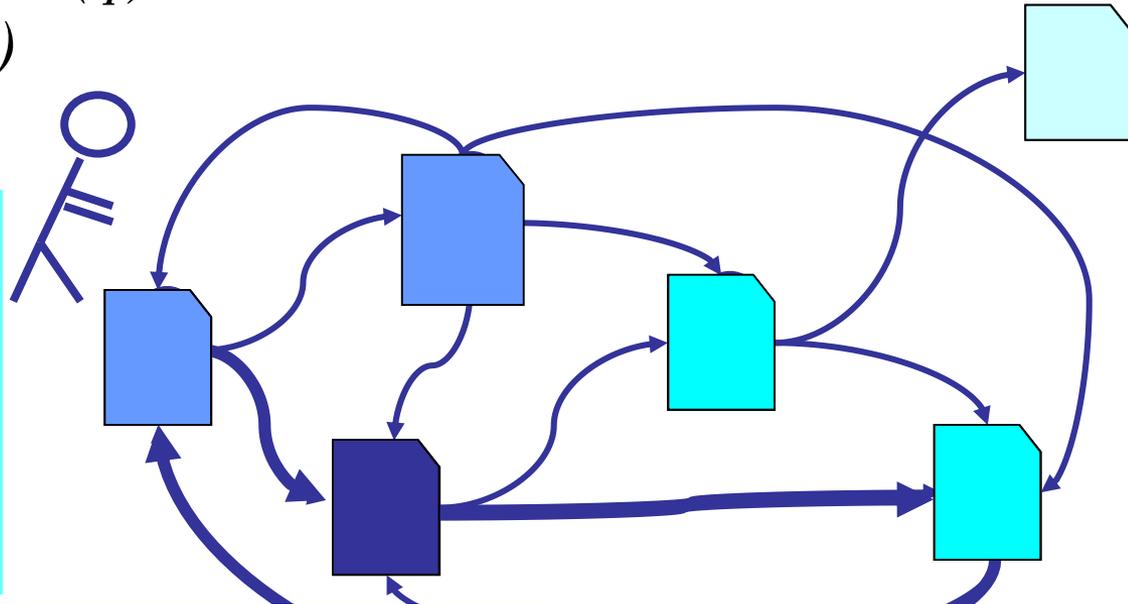
**Social Ranking**

with  $t(p, q) = 1 / \text{outdegree}(p)$

and  $j(q) = 1 / N$

**Extensions with**

- weighted links and jumps
- trust/spam scores
- personalized preferences
- graph derived from queries & clicks



**Authority (page q) = stationary prob. of visiting q**

**random walk: uniformly random choice of links + random jumps**

# Indexing with Inverted Lists

Vector space model suggests **term-document matrix**,  
but data is sparse and queries are even very sparse  
→ better use **inverted index lists** with terms as keys for B+ tree

q: Internet  
crisis  
trust

B+ tree on terms

crisis

...

Internet

...

trust

17: 0.3  
44: 0.4  
52: 0.1  
53: 0.8  
55: 0.6  
⋮

12: 0.5  
14: 0.4  
28: 0.1  
44: 0.2  
51: 0.6  
52: 0.3  
⋮

11: 0.6  
17: 0.1  
28: 0.7  
⋮

Google etc.:  
> 10 Mio. terms  
> 100 Bio. docs  
> 50 TB index

index lists  
with **postings**  
(DocId, score)  
sorted by DocId

terms can be full words, word stems, word pairs, substrings, N-grams, etc.  
(whatever „dictionary terms“ we prefer for the application)

- index-list entries in **DocId order** for fast Boolean operations
- many techniques for excellent **compression** of index lists
- additional **position index** needed for phrases, proximity, etc.  
(or other precomputed data structures)

# Search Result Quality: Evaluation Measures

ideal measure is user satisfaction

heuristically approximated by benchmarking measures

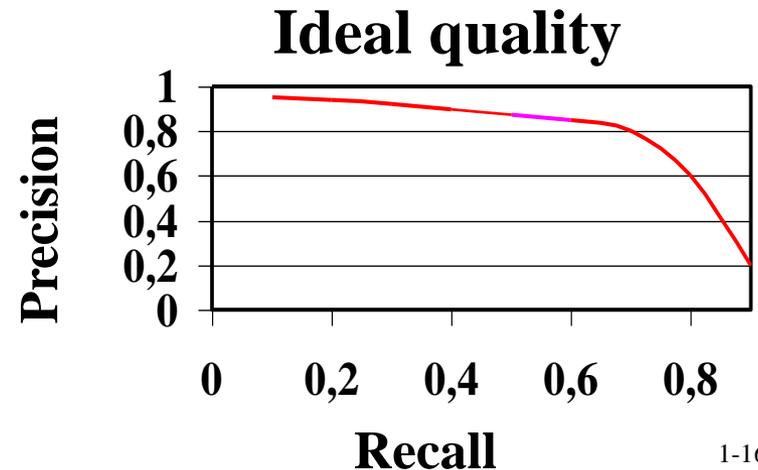
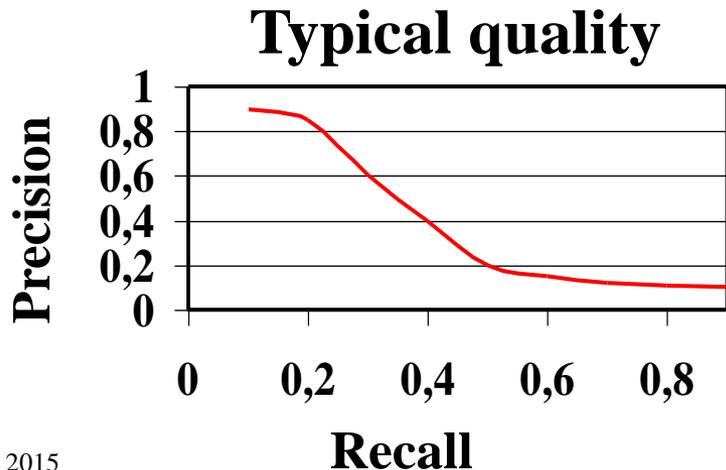
(on test corpora with query suite and relevance assessment by experts)

Capability to return **only** relevant documents (no false positives):

$$\textit{Precision (Prazision)} = \frac{\# \textit{ relevant docs among top } r}{r} \quad \text{typically for } r = 10, 100, 1000$$

Capability to return **all** relevant documents (no false negatives):

$$\textit{Recall (Ausbeute)} = \frac{\# \textit{ relevant docs among top } r}{\# \textit{ relevant docs}} \quad \text{typically for } r = \textit{ corpus size}$$



# Example: Google

<http://www.google.com>

[Gmail](#) [Images](#)  [Sign in](#)

Google  
Deutschland

Google Search

I'm Feeling Lucky

Google.de offered in: [Deutsch](#)

# Example: Google

<http://www.google.com>

Google

dylan o'brien

dylan o'brien  
dylan sprouse  
dylan sprayberry  
dylann roof

## Dylan O'Brien – Wikipedia

[https://de.wikipedia.org/wiki/Dylan\\_O'Brien](https://de.wikipedia.org/wiki/Dylan_O'Brien)

**Dylan O'Brien** wurde in New York City geboren und ist in Springfield Township, New Jersey aufgewachsen. Laut eigenen Angaben ist er zur Hälfte Ire. Im Alter ...  
Prakti.com - Maze Runner - The First Time – Dein erstes ...

## Dylan O'Brien - Wikipedia, the free encyclopedia

[https://en.wikipedia.org/wiki/Dylan\\_O'Brien](https://en.wikipedia.org/wiki/Dylan_O'Brien) - Diese Seite übersetzen

**Dylan O'Brien** (born August 26, 1991) is an American actor, musician, and director. He co-stars as "Stiles" Stilinski in the MTV series Teen Wolf. He also ...  
Deepwater Horizon - The First Time - High Road (film)

## Dylan O'Brien - IMDb

[www.imdb.com/name/nm3729721/](http://www.imdb.com/name/nm3729721/) - Diese Seite übersetzen

**Dylan O'Brien**, Actor: The Maze Runner. **Dylan O'Brien** was born in New York City, to Lisa Rhodes, a former actress who also ran an acting school, and Patrick ...

## Dylan O'Brien (@dylanobrien) | Twitter

<https://twitter.com/dylanobrien?lang=de>

886 Tweets • 66 Fotos/Videos • 4,01 Mio. Follower. "How. Bout. Them. METS?! :)"

## Dylan O'Brien (@dylanobrienofficial) • Instagram photos ...

<https://instagram.com/dylanobrienofficial?hl=de> - Diese Seite übersetzen

Yo what's up! This is a **Dylan O'Brien** fanstagram. Actor • The Maze Runner/Teen Wolf . Follow me I love you all :)

## DylanOBrien.Org // Dylan O'Brien Online Your Premiere ...

[dylanobrien.org/](http://dylanobrien.org/) - Diese Seite übersetzen

Your Number One Source For Everything On **Dylan O'Brien**.

## Dylan O'Brien Interview About The Scorch Trials ... - PopSugar

[www.popsugar.com](http://www.popsugar.com) > Entertainment > Dylan O'Brien - Diese Seite übersetzen

18.09.2015 - **Dylan O'Brien** is a lucky guy. While his character, Thomas, only has one love interest in last year's The Maze Runner, he now has two in the ...

## Dylan O'Brien - Rotten Tomatoes

[www.rottentomatoes.com/celebrity/dylan\\_obrien/](http://www.rottentomatoes.com/celebrity/dylan_obrien/) - Diese Seite übersetzen

**Dylan O'Brien** Celebrity Profile - Check out the latest **Dylan O'Brien** photo gallery, biography, pics, pictures, interviews, news, forums and blogs at Rotten ...

## Dylan O'Brien on Leading 'Maze Runner': 'I Never Want to ...

[variety.com/.../dylan-obrien-maze-runner-the-scorc...](http://variety.com/.../dylan-obrien-maze-runner-the-scorc...) - Diese Seite übersetzen

16.09.2015 - "Maze Runner: The Scorch Trials" star **Dylan O'Brien** hopes to follow in the footsteps of Matt Damon and Sam Rockwell's careers. "I'm living my ...



## Dylan O'Brien

Schauspieler

Dylan O'Brien ist ein US-amerikanischer Schauspieler. Seit Juli 2011 ist er in einer der Hauptrollen als Stiles Stilinski in der MTV-Fernsehserie Teen Wolf zu sehen. [Wikipedia](#)

**Geboren:** 26. August 1991 (Alter 24), New York City, NY

**Größe:** 1,80 m

**Geschwister:** Julia O'Brien

**Eltern:** Lisa O'Brien, Patrick O'Brien

**Auszeichnungen:** Teen Choice Award - Choice TV Villain, mehr

## Filme und Fernsehsendungen

Über 3 weitere ansehen



Teen Wolf  
Seit 2011



Maze  
Runner –  
Die Auser...  
2014



Maze  
Runner 2 -  
Die Auser...  
2015



The First  
Time – Dein  
erst...  
2012



Prakti.com  
2013

## Wird auch oft gesucht

Über 15 weitere ansehen



Tyler Posey



Tyler  
Hoechlin



Thomas  
Brodie-Sa...



Kaya  
Scodelario



Britt  
Robertson

Feedback

# Example: Google

<http://www.google.com>

Google dylan concerts

Web Bilder News Videos Shopping Mehr ▾ Suchoptionen

 Bob Dylan / Kommende Veranstaltungen

Sa., 17. Okt. 18:00	Saarbrücken, Deutschland Saarlandhalle	Mo., 19. Okt. 20:00	Paris, Frankreich Le Dôme de Paris - Palais Des...	Do., 22. Okt. 19:01	London, Vereinigtes Königr... Royal Albert Hall
So., 18. Okt. 20:00	Paris, Frankreich Le Dôme de Paris - Palais Des...	Mi., 21. Okt. 19:01	London, Vereinigtes Königr... Royal Albert Hall	Fr., 23. Okt. 19:01	London, Vereinigtes Königr... Royal Albert Hall

## Bob Dylan Tickets - safetickets.net

Anzeige [www.safetickets.net/Bob-Dylan-Tickets](http://www.safetickets.net/Bob-Dylan-Tickets)  
Tickets for Bob Dylan Buy your tickets at Safetickets

## Upcoming dates - BobDylan.com

[www.bobdylan.com/us/upcoming-dates](http://www.bobdylan.com/us/upcoming-dates) ▾ Diese Seite übersetzen  
View Bob Dylan's upcoming events schedule & tour dates. Buy Bob Dylan tickets at the official website.  
Set Lists - Bob Dylan 101 - The Drawn Blank Series - Royal Albert Hall

## PROCHAINES DATES | The Official Bob Dylan Site

[www.bobdylan.com/fr/upcoming-dates](http://www.bobdylan.com/fr/upcoming-dates) ▾ Diese Seite übersetzen  
There will be no pre-sale ticket offers for dates on this tour, so be sure to note the ...  
See Bob Dylan with a VIP package and choose from Front Row or other

## Bob Dylan - Bob Links - 2015 Tour Guide

[www.boblinks.com/](http://www.boblinks.com/) ▾ Diese Seite übersetzen  
performing during the period 1956 through 1966 and what they remember from the performances. Also looking for concert posters, flyers, programs and ticket ...  
October 8, 2015 Frederiksberg ... - New Additions - Older Tour Guides - Images

## Bob Dylan Tickets, Tour Dates 2015 & Concerts – Songkick

[www.songkick.com/artists/408511-bob-dylan](http://www.songkick.com/artists/408511-bob-dylan) ▾ Diese Seite übersetzen  
Buy tickets for an upcoming Bob Dylan concert near you. List of all Bob Dylan tickets and tour dates for 2015.

Sa., 17. Okt. Bob Dylan Saarlandhalle, Saarbrücken ...  
So., 18. Okt. Bob Dylan Palais Des Sports, Paris, France  
Mo., 19. Okt. Bob Dylan

## Bob Dylan Tickets | Bob Dylan Concert Tickets & Tour Dates ...

[www.ticketmaster.com](http://www.ticketmaster.com) > ... > Rock & Pop ▾ Diese Seite übersetzen  
Buy Bob Dylan tickets from the official Ticketmaster.com site. Find Bob Dylan tour schedule, concert details, reviews and photos.

## Bob Dylan Concert Reviews and Ratings | Ticketmaster

[reviews.ticketmaster.com/717171...dylan...reviews.ht](http://reviews.ticketmaster.com/717171...dylan...reviews.ht) ... ▾ Diese Seite übersetzen  
31.08.2015 - This show was overpriced and nothing more than a nostalgic nod at best.  
Dylan has so much immortal material that just gets kicked to the side ...



## Bob Dylan

Musiker

Bob Dylan ist ein US-amerikanischer Folk- und Rockmusiker und Lyriker. Der Sänger spielt Gitarre, Mundharmonika, Orgel und Klavier. Er gilt als einer der einflussreichsten Musiker des 20. Jahrhunderts. [Wikipedia](#)

**Master the information deluge**

Anzeigen

## Dylan Anniversary Concert

[www.bear-family.de/Musikshop](http://www.bear-family.de/Musikshop) ▾  
4,8 ★★★★★ Bewertung für Anbieter  
bei Bear Family - Ihr Shop wenn es um gute Musik geht. Jetzt besuchen!

## Bob Dylan Tournee

[www.getgo.de/Bob\\_Dylan\\_Tournee](http://www.getgo.de/Bob_Dylan_Tournee) ▾  
Bob Dylan Tournee - Tickets ordern.  
Bob Dylan Tournee: live!

## Dylan Tickets

[www.ticketonline.de/dylan](http://www.ticketonline.de/dylan) ▾  
Originaltickets zu Top-Preisen.  
Schnell und sicher online kaufen!

## Bob Dylan Tickets 2015

[www.viagogo.de/Bob-Dylan-Tickets](http://www.viagogo.de/Bob-Dylan-Tickets) ▾  
Bob Dylan Tickets 100% garantiert.  
Tickets sicher bei viagogo kaufen.

# Example: Google

<http://www.google.com>



dylan concerts



Web Images Videos News Shopping More Search tools



Bob Dylan / Upcoming events

Wed, Nov 11 8:00 PM	Regensburg Donau Arena	Wed, Oct 21 7:01 PM	London, United Kingdom Royal Albert Hall	Fri, Oct 23 7:01 PM	London, United Kingdom Royal Albert Hall	Sun, Oct 25 7:00 PM
Mon, Oct 19 8:00 PM	Paris, France Le Dôme de Paris - Palais Des...	Thu, Oct 22 7:01 PM	London, United Kingdom Royal Albert Hall	Sat, Oct 24 7:00 PM	London, United Kingdom Royal Albert Hall	Tue, Oct 27 7:30 PM

## Upcoming Dates | The Official Bob Dylan Site - BobDylan.com

[www.bobdylan.com/de/upcoming-dates](http://www.bobdylan.com/de/upcoming-dates)

There will be no pre-sale ticket offers for dates on this tour, so be sure to note the on-sale dates and links here. See Bob Dylan with a VIP package and choose ...

## PROCHAINES DATES | The Official Bob Dylan Site

[www.bobdylan.com/fr/upcoming-dates](http://www.bobdylan.com/fr/upcoming-dates)

There will be no pre-sale ticket offers for dates on this tour, so be sure to note the ... See Bob Dylan with a VIP package and choose from Front Row or other

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[www.songkick.com/artists/408511-bob-dylan](http://www.songkick.com/artists/408511-bob-dylan)

Buy tickets for an upcoming Bob Dylan concert near you. List of all Bob Dylan tickets and tour dates for 2015.

Mon, Oct 19 Palais Des Sports, Paris, France  
Wed, Oct 21 Royal Albert Hall, London, UK  
Thu, Oct 22 Royal Albert Hall, London, UK

## Bob Dylan - Bob Links - 2015 Tour Guide

[www.boblinks.com/](http://www.boblinks.com/)

Provides links to Bob Dylan related internet resources.

October 8, 2015 Frederiksberg ... - New Additions - Older Tour Guides - Images

## Bob Dylan Concert Setlists | setlist.fm

[www.setlist.fm](http://www.setlist.fm) > Artists > D

Get Bob Dylan setlists - view them, share them, discuss them with other Bob Dylan fans for free on setlist.fm!

Sun, Oct 18 Bob Dylan at Palais des ... Palais des Sports, Paris, France  
Mon, Oct 19 Bob Dylan at Palais des ... Palais des Sports, Paris, France

## Bob Dylan Tickets | Bob Dylan Concert Tickets & Tour Dates ...

[www.ticketmaster.com](http://www.ticketmaster.com) > All Tickets > Music Tickets > Rock & Pop

Buy Bob Dylan tickets from the official Ticketmaster.com site. Find Bob Dylan tour schedule, concert details, reviews and photos.

## List of Bob Dylan concert tours - Wikipedia, the free ...

[https://en.wikipedia.org/wiki/List\\_of\\_Bob\\_Dylan\\_concert\\_tours](https://en.wikipedia.org/wiki/List_of_Bob_Dylan_concert_tours)

The Never Ending Tour commenced on June 7, 1988, and Dylan has played roughly 100 dates a year for the entirety of the 1990s and 2000s—a heavier ...



## Bob Dylan

Singer-songwriter

Bob Dylan is an American singer-songwriter, artist and writer. He has been influential in popular music and culture for more than five decades. [Wikipedia](#)

**Born:** May 24, 1941 (age 74), Duluth, Minnesota, United States

**Children:** Jakob Dylan, Jesse Dylan, Desiree Gabrielle Dennis-Dylan, Sam Dylan, Maria Dylan, Anna Dylan

## Songs

Knockin' On Heaven's Door	1973	Pat Garrett & Billy the ...
Blowin' in the Wind	1963	The Freewheelin' Bob ...
The Times They Are A-C...	1964	The Times They Are a...
All Along the Watchtower	1967	John Wesley Harding
Don't Think Twice, It's All...	1963	The Freewheelin' Bob ...

## Profiles



Facebook



Twitter



YouTube



Myspace

## Quotes

View 7+ more

*People seldom do what they believe in. They do what is convenient, then repent.*

# Example: Google

<http://www.google.com>

Google dylan songs

Web Videos Images News Shopping More Search tools

Understand user needs



Bob Dylan / Songs

Knockin' On Heaven's Door  
Pat Garrett & Billy the Kid · 1973



Blowin' in the Wind  
The Freewheelin' Bob Dylan · 1963



The Times They Are A-Changin'  
The Times They Are a-Changin' · 1964



All Along the Watchtower  
John Wesley Harding · 1967



Don't Think Twice, It's All Right  
The Freewheelin' Bob Dylan · 1963



Mr. Tambourine Man  
Bringing It All Back Home · 1965



Forever Young  
Planet Waves · 1974



Like a Rolling Stone  
Highway 61 Revisited · 1965



Girl From the North Country  
The Freewheelin' Bob Dylan · 1963



Tangled Up in Blue  
Blood on the Tracks · 1975



Subterranean Homesick Blues  
Bringing It All Back Home · 1965



It Ain't Me Babe  
Another Side of Bob Dylan · 1964



## Bob Dylan Songs | The Official Bob Dylan Site - BobDylan.com

<https://www.bobdylan.com/us/songs>

View a list of all of Bob Dylan songs at the official website. Listen to tracks, view song information, purchase tracks and more.

[A Hard Rain's A-Gonna Fall](#) - [All Along The Watchtower](#) - [Like A Rolling Stone](#)

## List of songs written by Bob Dylan - Wikipedia, the free ...

[https://en.wikipedia.org/wiki/List\\_of\\_songs\\_written\\_by\\_Bob\\_Dylan](https://en.wikipedia.org/wiki/List_of_songs_written_by_Bob_Dylan)

This list contains songs written by American singer-songwriter Bob Dylan. ... 1967, Apple Suckling Tree, Dylan, The Basement Tapes, 1975 ... 1963, Blind Willie McTell, Dylan, The Bootleg Series Volumes 1-3 (Rare ... N/A, Love Rescue Me, Dylan, U2, Unreleased, N/A, Recorded by U2 for their album Rattle and Hum.

## Bob Dylan: 30 greatest songs - Music - The Telegraph

[www.telegraph.co.uk/music/artists/bob-dylan-30-greatest-songs/](http://www.telegraph.co.uk/music/artists/bob-dylan-30-greatest-songs/)

Jul 24, 2015 - Is this the first hip-hop song? Lyrics cascade in a relentless motormouth gush over jittery blues, with Dylan tearing up social norms in a surreal ...

## Top 10 Bob Dylan Songs - YouTube



[www.youtube.com/watch?v=65-ocuGODM](http://www.youtube.com/watch?v=65-ocuGODM)

Nov 13, 2010 - Uploaded by RetroTop10

As with all my videos, this list is based on my opinion and how much I enjoy listening to each song. If you liked ...

## Songfacts - List of songs by Bob Dylan

[www.songfacts.com/artist-bob\\_dylan.php](http://www.songfacts.com/artist-bob_dylan.php)

List of songs with Songfacts entries for Bob Dylan. ... Bob Dylan. May 24, 1941. List of songs with Songfacts and Lyrics by Bob Dylan. Songs · Artistfacts ...

## The 10 Greatest Bob Dylan Songs | Rolling Stone

[www.rollingstone.com/music/.../the-10-greatest-bob-dylan-songs-20110](http://www.rollingstone.com/music/.../the-10-greatest-bob-dylan-songs-20110)

May 11, 2011 - Dylan later described "Every Grain of Sand" as "an inspired song that just came to ... the best song dylan ever wrote was " Blind Willie McTell" ...

## The 10 Best Post-1960s Bob Dylan Songs - Rolling Stone

[www.rollingstone.com/.../best-post-1960s-bob-dylan-songs-20150211](http://www.rollingstone.com/.../best-post-1960s-bob-dylan-songs-20150211)

Feb 11, 2015 - Take Dylan's 1963 tune "Blind Willie McTell." He cut it during the

## Bob Dylan

Singer-songwriter

Bob Dylan is an American singer-songwriter, artist and writer. He has been influential in popular music and culture for more than five decades. [Wikipedia](#)

**Born:** May 24, 1941 (age 74), Duluth, Minnesota, United States

**Children:** Jakob Dylan, Jesse Dylan, Desiree Gabrielle Dennis-Dylan, Sam Dylan, Maria Dylan, Anna Dylan



## Upcoming events

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*All I can do is be me, whoever that is.*

*Take care of all your memories. For you cannot relive them.*

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 Bob Dylan / Awards

Grammy Award for Album of the Year 1998, 1973 · Time Out of Mind, The Concert for ...	Grammy Hall of Fame 2015, 2013, 2006, ... · Blood on the Tracks, The ...	Golden Globe Award for Best Original Song 2001 · Things Have Changed
Presidential Medal of Freedom 2012	Academy Award for Best Original Song 2001 · Things Have Changed	Grammy Award for Best Male Rock Vocal P... 1998, 1980 · Cold Irons Bound, Gotta Serve Som...
Kennedy Center Honors 1997	Grammy Award for Best Contemporary Folk ... 2007, 2002, 1998 · Modern Times, Love and The...	Grammy Award for Best Traditional Folk Album 1995 · World Gone Wrong
Grammy Lifetime Achievement Award 1991	Ordre des Arts et des Lettres 1990	Grammy Award for Best Solo Rock Vocal Pe... 2007 · Someday Baby

**List of awards and nominations received by Bob Dylan ...**  
[https://en.wikipedia.org/.../List\\_of\\_awards\\_and\\_nominations\\_received\\_b...](https://en.wikipedia.org/.../List_of_awards_and_nominations_received_b...)  
1 Grammy Awards; 2 Grammy Hall of Fame; 3 Rock and Roll Hall of Fame; 4 Academy Awards; 5 Golden Globe Awards; 6 Honors and Inductions; 7 Footnotes ...  
[Grammy Awards - Grammy Hall of Fame - Rock and Roll Hall of Fame](#)

**Bob Dylan | GRAMMY.com**  
[www.grammy.com/artist/bob-dylan](http://www.grammy.com/artist/bob-dylan)  
2006 - 49th Annual GRAMMY Awards ... Bob Dylan: 2015 MusiCares Person Of The Year ... Sheryl Crow: Bob Dylan Is "The Greatest American Songwriter" ...

**Images for dylan awards** [Report images](#)



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**Bob Dylan - Awards - IMDb**  
[www.imdb.com/name/nm0001168/awards](http://www.imdb.com/name/nm0001168/awards)  
Bob Dylan on IMDb: Awards, nominations, and wins.

**Read Bob Dylan's Complete, Riveting MusiCares Speech ...**  
[www.rollingstone.com/.../read-bob-dylans-complete-riveting-musicares-s...](http://www.rollingstone.com/.../read-bob-dylans-complete-riveting-musicares-s...)  
Feb 9, 2015 - As the recipient of the MusiCares Person of the Year 2015 award, Bob Dylan delivered a 30-minute acceptance speech that was equal parts ...

## Bob Dylan

Singer-songwriter

Bob Dylan is an American singer-songwriter, artist and writer. He has been influential in popular music and culture for more than five decades. [Wikipedia](#)

**Children:** Jakob Dylan, Jesse Dylan, Desiree Gabrielle Dennis-Dylan, Sam Dylan, Maria Dylan, Anna Dylan



### Upcoming events

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### Songs

<a href="#">Knockin' On Heaven's Door</a>	1973	<a href="#">Pat Garrett &amp; Billy the ...</a>
<a href="#">Blowin' in the Wind</a>	1963	<a href="#">The Freewheelin' Bob ...</a>
<a href="#">The Times They Are A-C...</a>	1964	<a href="#">The Times They Are a...</a>
<a href="#">All Along the Watchtower</a>	1967	<a href="#">John Wesley Harding</a>
<a href="#">Don't Think Twice, It's All...</a>	1963	<a href="#">The Freewheelin' Bob ...</a>

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Bob Dylan / Spouse

Carolyn Dennis  
m. 1986–1992



Sara Dylan  
m. 1965–1977



---

**Sara Dylan - Wikipedia, the free encyclopedia**  
[https://en.wikipedia.org/wiki/Sara\\_Dylan](https://en.wikipedia.org/wiki/Sara_Dylan)   
Jump to **Marriage to Bob Dylan** - [edit]. Lownds and Dylan became romantically involved sometime in late 1964; soon afterwards, they moved into ...

**Bob Dylan - Wikipedia, the free encyclopedia**  
[https://en.wikipedia.org/wiki/Bob\\_Dylan](https://en.wikipedia.org/wiki/Bob_Dylan)   
**Spouse(s)**, Sara Lownds ( m. ... **Bob Dylan** (/ˈdɪlən/; born Robert Allen Zimmerman, May 24, 1941) is an ..... The album was dedicated to "Gabby Goo Goo", a nickname for the daughter of Dylan and **Carolyn Dennis**, Desiree Gabrielle ...  
[Discography](#) - [Jakob Dylan](#) - [Jesse Dylan](#) - [Bob Dylan \(album\)](#)

**Bob Dylan hid one marriage - and a daughter - for 15 years ...**  
[www.dailymail.co.uk/.../Bob-Dylan-hid-marriage--daughter--15-years-C...](http://www.dailymail.co.uk/.../Bob-Dylan-hid-marriage--daughter--15-years-C...)   
May 8, 2009 - **Bob Dylan** today: The singer reportedly has a large number of 'secret' .... and the **marriage** to **Carolyn Dennis** is the only other **marriage** for him.

**DYLAN'S GIRLFRIENDS | Bob Dylan-Visions of Dylan**  
<https://visionsbobdylan.wordpress.com/dylans-girlfriends/>   
Pix of **Dylan's** Girlfriends, wives and other romances. All pix copyright of the ... **Sara Dylan**. **BobSara** ... **Carolyn Dennis**, **Bob's** second wife. Ruth Tyrangiel.

**Bob Dylan - Rolling Stone**  
[www.rollingstone.com/.../6-things-we-learned-from-the-new-bob-dylan-...](http://www.rollingstone.com/.../6-things-we-learned-from-the-new-bob-dylan-...)   
Sep 9, 2014 - A new tell-all book by **Bob Dylan's** former road manager reveals the truth ... been faithful and that it was a constant challenge in the **marriage**.

**Bob Dylan Secretly Marries & Breaks Up With Third Wife ...**  
[radaronline.com/.../bob-dylan-darlene-springs-secret-wedding-wife-split-...](http://radaronline.com/.../bob-dylan-darlene-springs-secret-wedding-wife-split-...)   
Nov 6, 2014 - **Bob Dylan** has pulled off what few in Hollywood have been able to accomplish ... Springs allegedly spent her **husband's** \$180 million fortune on ...

**Accelerated Decrepitude: The 10 Sins of Bob Dylan**  
[accelerateddecrepitude.blogspot.com/2005/12/10-sins-of-bob-dylan.html](http://accelerateddecrepitude.blogspot.com/2005/12/10-sins-of-bob-dylan.html)   
Dec 5, 2005 - **Dylan's** diatribe against the Rotolo sisters, ex-girlfriend Suze and ... Hearing that **Bob** had taken ill in Italy, she went to his hotel room ..... Joan always wanted more of **Bob** than he could or would give - she proposed **marriage** ...

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## Bob Dylan

Singer-songwriter

Bob Dylan is an American singer-songwriter, artist and writer. He has been influential in popular music and culture for more than five decades.  
[Wikipedia](#)

**Born:** May 24, 1941 (age 74), Duluth, Minnesota, United States  
**Height:** 1.71 m  
**Spouse:** [Carolyn Dennis](#) (m. 1986–1992), [Sara Dylan](#) (m. 1965–1977)

### Upcoming events

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<a href="#">Saarbrücken</a> Saarlandhalle	<b>Sat</b> Oct 17
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## Bob Dylan / Movies



### Category: Films about Bob Dylan - Wikipedia, the free ...

[https://en.wikipedia.org/wiki/Category:Films\\_about\\_Bob\\_Dylan](https://en.wikipedia.org/wiki/Category:Films_about_Bob_Dylan)

Pages in category "Films about Bob Dylan". The following 9 pages are in this category, out of 9 total. This list may not reflect recent changes (learn more).

### I'm Not There. (2007) - IMDb

[www.imdb.com/title/tt0368794/](http://www.imdb.com/title/tt0368794/)

★ ★ ★ ★ ★ Rating: 7/10 - 46,244 votes

Ruminations on the life of Bob Dylan, where six characters embody a different ... Here's a rundown of the top 25 movies by year from 1990 to 2014 according to ...

### Bob Dylan - IMDb

[www.imdb.com/name/nm0001168/](http://www.imdb.com/name/nm0001168/)

Bob Dylan and David Letterman at event of Late Show with David Letterman (1993) ... Dr. Still of Bob Dylan and Cheech Marin in Masked and Anonymous (2003) Still ... 2014 Ritmes del cor (TV Movie documentary) (writer: "Per sempre jove").

### Bob Dylan at the Movies - Searching For A Gem

[www.searchingforagem.com/Soundtracks.htm](http://www.searchingforagem.com/Soundtracks.htm)

Aug 27, 2015 - Masked And Anonymous (2003). All the songs in this film are original Dylan performances or cover versions of Dylan songs, Sony Music ...

### Bob Dylan Filmography - Expecting Rain

[www.expectingrain.com/dok/film/filmography.html](http://www.expectingrain.com/dok/film/filmography.html)

Bob Dylan Filmography Films in which Bob Dylan appears (includes major TV ... Pennebaker Dont Look Back [doc] 1967 edited by B.Dylan Eat the Document [doc] ... Last Waltz [doc] 1979 Bob Dylan Renaldo and Clara 1984 Jim Brown Woody ... Dylan [doc, broadcast by BBC] 1987 Richard Marquand Hearts of Fire 1989 ...

### Bob Dylan Movies - Folk Music - About.com

[folkmusic.about.com](http://folkmusic.about.com) > ... > Folk Music Movies

From his own four-hour epic, Renaldo and Clara, to Martin Scorsese's ... Backtrack and Paradise Cove, check out this chronology of everything Dylan has ever ...

### The 20 Best Uses of Bob Dylan Songs In Film :: Movies :: Lists

[www.pastemagazine.com/blogs/.../20-best-bob-dylan-songs-in-film.html](http://www.pastemagazine.com/blogs/.../20-best-bob-dylan-songs-in-film.html)

## Bob Dylan

Singer-songwriter

Bob Dylan is an American singer-songwriter, artist and writer. He has been influential in popular music and culture for more than five decades. [Wikipedia](#)

**Born:** May 24, 1941 (age 74), Duluth, Minnesota, United States

**Albums:** [The Times They Are a-Changin'](#), [more](#)

### Upcoming events

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<a href="#">Paris, France</a> Le Dôme de Paris - Palais Des Sports	Mon Oct 19
<a href="#">London, United Kingdom</a> Royal Albert Hall	Wed Oct 21

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*All I can do is be me, whoever that is.*

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## [The 20 Best Uses of Bob Dylan Songs In Film :: Movies :: Lists](#)

[www.pastemagazine.com/blogs/.../20-best-bob-dylan-songs-in-film.html](http://www.pastemagazine.com/blogs/.../20-best-bob-dylan-songs-in-film.html) ▾

Feb 27, 2012 - Bob Dylan has had his music used in so many movies, it's almost become a cliché. But that pairing of song and film has also created some of ...

## [Bob Dylan at the Movies - Searching For A Gem](#)

[www.searchingforagem.com/Soundtracks.htm](http://www.searchingforagem.com/Soundtracks.htm) ▾

Aug 27, 2015 - There are many more films that contain cover versions of Dylan songs, but they are outside the scope of this site. For these, see David Plentus' ...

## [Bob Dylan songs in movies and TV series list](#)

[www.listal.com/list/bob-dylan-songs-in-movies](http://www.listal.com/list/bob-dylan-songs-in-movies) ▾

Jul 15, 2010 - Beyond Here Lies Nothin', Forgetful Heart, I Believe In You performed by Don Sparks, I Feel A Change Coming On, It's All Good, Life Is Hard ...

## [Bob Dylan - IMDb](#)

[www.imdb.com/name/nm0001168/](http://www.imdb.com/name/nm0001168/) ▾

Bob Dylan and David Letterman at event of Late Show with David Letterman (1993) ... of Song ( Still of Bob Dylan, Neil Diamond, Robbie Robertson, Rick Danko, Dr. .... 2014 Ritmes del cor (TV Movie documentary) (writer: "Per sempre jove").

## [This Clip of Bill Murray Singing Along to Bob Dylan Will Get ...](#)

[time.com/3475217/bill-murray-st-vincent-bob-dylan-sing/](http://time.com/3475217/bill-murray-st-vincent-bob-dylan-sing/) ▾

Oct 6, 2014 - The film is called 'St. Vincent' and it's in theaters Oct. 10. ... hybrid as he harmonizes with the song blaring through his headphones. He does all ...

## [The Best Dylan Cues in Movie History | Flavorwire](#)

[flavorwire.com/325819/the-best-dylan-cues-in-movie-history](http://flavorwire.com/325819/the-best-dylan-cues-in-movie-history) ▾

Sep 11, 2012 - He's also an ever-present force in film and television, with his songs (as ... In honor of Dylan's new record (always a cause for celebration), we ...

## [The 10 Best Post-1960s Bob Dylan Songs - Rolling Stone](#)

[www.rollingstone.com/.../best-post-1960s-bob-dylan-songs-20150211](http://www.rollingstone.com/.../best-post-1960s-bob-dylan-songs-20150211) ▾

Feb 11, 2015 - The simple song worked perfectly in the film and gave Dylan a much-needed hit, setting the stage for his huge comeback tour the following year ...

## [List of songs written by Bob Dylan - Wikipedia, the free ...](#)

[https://en.wikipedia.org/wiki/List\\_of\\_songs\\_written\\_by\\_Bob\\_Dylan](https://en.wikipedia.org/wiki/List_of_songs_written_by_Bob_Dylan) ▾

This list contains songs written by American singer-songwriter Bob Dylan, including ..... Dylan, Unreleased, N/A, Recorded by George Harrison for the 1985 film, ...

## [BOB DYLAN'S SOUNDTRACK SONGS Part One: Things ...](#)

[www.chrisgregory.org/.../PermaLink.guid,dddc625b-bf60-4af7-85c4-f2...](http://www.chrisgregory.org/.../PermaLink.guid,dddc625b-bf60-4af7-85c4-f2...) ▾

Apr 12, 2008 - The figurine is the Oscar Dylan won in 2001 for the song Things Have Changed from the film The Wonder Boys. As ever with Dylan it's hard to ...

# Example: Google

<http://www.google.com>



bob dylan protest songs



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## [Top 10 Bob Dylan Protest Songs - Ultimate Classic Rock](#)

[ultimateclassicrock.com/bob-dylan-protest-songs/](http://ultimateclassicrock.com/bob-dylan-protest-songs/) ▾

Nov 3, 2012 - It's time to discuss hurricanes, wind and rain (and social injustice, naturally!), while we talk about our list of **Bob Dylan's Top 10 Protest Songs!**

## [5 Bob Dylan Songs That Actually Changed the Course of ...](#)

[mic.com/.../5-bob-dylan-songs-that-actually-changed-the-course-of-histo...](http://mic.com/.../5-bob-dylan-songs-that-actually-changed-the-course-of-histo...) ▾

Mar 20, 2015 - **Bob Dylan** twisted timeless **songs** and hooked them to the most pressing modern issues. His **songs** inspired new **political** and artistic ...

## [Bob Dylan Protest Songs and the Civil Rights Movement](#)

[folkmusic.about.com/od/bobdylan/a/Bob-Dylan-Civil-Rights.htm](http://folkmusic.about.com/od/bobdylan/a/Bob-Dylan-Civil-Rights.htm) ▾

Although **Bob Dylan** gained a superficial **political** worldview through Woody Guthrie's musical influence back in Minneapolis, when he arrived in New York in ...

## [Bob Dylan, 'Masters of War' - Rolling Stone](#)

[www.rollingstone.com/.../protest-songs.../bob-dylan-masters-of-war-2014...](http://www.rollingstone.com/.../protest-songs.../bob-dylan-masters-of-war-2014...) ▾

Dec 3, 2014 - The very week that **Bob Dylan** arrived in New York City, outgoing president Dwight ... Readers' Poll: The 10 Best **Protest Songs** of All Time.

## [The Politics of Bob Dylan | Red Pepper](#)

[www.redpepper.org.uk/the-politics-of-bob-dylan/](http://www.redpepper.org.uk/the-politics-of-bob-dylan/) ▾

The **protest songs** for which **Bob Dylan** is most famous were written in a 20-month burst in the early 1960s. Within a year Dylan had turned his back on them - not ...

## [The Political Bob Dylan | Dissent Magazine](#)

[https://www.dissentmagazine.org/online\\_articles/the-political-bob-dylan](https://www.dissentmagazine.org/online_articles/the-political-bob-dylan) ▾

May 24, 2011 - Journalists and historians often treat **Dylan's songs** as emblematic of the era and **Dylan** himself as the quintessential "**protest**" singer, an image ...

## [List of anti-war songs - Wikipedia, the free encyclopedia](#)

[https://en.wikipedia.org/wiki/List\\_of\\_anti-war\\_songs](https://en.wikipedia.org/wiki/List_of_anti-war_songs) ▾

Many of these songs are considered **protest songs**, and some have been embraced ... Some popular anti-war songs include: .... 1962, "John Brown", **Bob Dylan**.

## [Protest and Rock n' Roll During the Vietnam War - Student ...](#)

[www.studentpulse.com/.../protest-and-rock-n-roll-during-the-vietnam-w...](http://www.studentpulse.com/.../protest-and-rock-n-roll-during-the-vietnam-w...) ▾

by AE Hopkins - 2012 - [Related articles](#)

To begin, the highly-influential folk musician **Bob Dylan** recorded the song ... The song, written in 1969, is perhaps the most direct anti-war **protest song** ever ...

## [The Water's Edge » The Twenty Best Vietnam Protest Songs](#)

[blogs.cfr.org/lindsay/2015/03/05/the-twenty-best-vietnam-protest-songs/](http://blogs.cfr.org/lindsay/2015/03/05/the-twenty-best-vietnam-protest-songs/) ▾

Mar 5, 2015 - With that caveat out of the way, here are my twenty picks for best **protest** **songs** in order of the year they were released. **Bob Dylan**, "Blowin' in ...

# Example: Google

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dylan song about a black boxer



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## Hurricane (Bob Dylan song) - Wikipedia, the free encyclopedia

[https://en.wikipedia.org/wiki/Hurricane\\_\(Bob\\_Dylan\\_song\)](https://en.wikipedia.org/wiki/Hurricane_(Bob_Dylan_song))

"Hurricane" is a protest **song** by Bob Dylan co-written with Jacques Levy, ... for the killing of an African-American tavern owner earlier during the same night.

## Bob Dylan - Hurricane Lyrics - YouTube



[www.youtube.com/watch?v=gGMSfIH850o](http://www.youtube.com/watch?v=gGMSfIH850o)

Jan 30, 2014 - Uploaded by kerasole

... Carter (born May 6, 1937) is an American middleweight **boxer**. ... Carter's story inspired the 1975 Bob Dylan **song** Hurricane. ... punish as if you are **black**, poor,, also check a **song** called "the lonesome death of Hattie caroll.

## 'Hurricane' Carter, Boxer who Inspired Bob Dylan Song ...

[www.people.com/people/article/0,,20808661,00.html](http://www.people.com/people/article/0,,20808661,00.html)

Apr 20, 2014 - Rubin 'Hurricane' Carter, **Boxer** who Inspired Bob Dylan Song, Dies at ... In June 1966, three white people were shot by two **black** men at the ...

## Boxer Rubin Carter, Subject of Bob Dylan's "Hurricane ...

[pitchfork.com/54858-boxer-rubin-carter-subject-of-bob-dylans-hurricane/](http://pitchfork.com/54858-boxer-rubin-carter-subject-of-bob-dylans-hurricane/)

Apr 20, 2014 - In 1967, three white people were shot by two **black** men in Paterson, New ... In the 1970s, it was a rare protest **song** from Dylan, and it's one that ...

## Hurricane by Bob Dylan Songfacts

[www.songfacts.com/detail.php?id=715](http://www.songfacts.com/detail.php?id=715)

Hurricane by Bob Dylan **song** meaning, lyric interpretation, video and chart ... of the best **song** ever and has a great meaning it is about a famous **black boxer** ...

## BOB DYLAN LYRICS - Hurricane - A-Z Lyrics

[www.azlyrics.com/lyrics/bobdylan/hurricane.html](http://www.azlyrics.com/lyrics/bobdylan/hurricane.html)

Lyrics to "Hurricane" **song** by BOB DYLAN: Pistols shots ring out in the barroom night Enter Patty ... If you're **black** you might as well not shown up on the street

## Rubin 'Hurricane' Carter, Boxer Who Inspired Bob Dylan ...

[www.billboard.com/rubin-hurricane-carter-boxer-who-inspired-bob-dylan/](http://www.billboard.com/rubin-hurricane-carter-boxer-who-inspired-bob-dylan/)

Apr 20, 2014 - Rubin "Hurricane" Carter, the **boxer** whose wrongful murder conviction ... of racial injustice and inspired Bob Dylan's 1975 **song** "Hurricane," died Sunday. ... In June 1966, three white people were shot by two **black** men at the ...

## Top 10 Bob Dylan Protest Songs - Ultimate Classic Rock

[ultimateclassicrock.com/bob-dylan-protest-songs/](http://ultimateclassicrock.com/bob-dylan-protest-songs/)

Nov 3, 2012 - This Bob Dylan protest **song** became an anthem for the civil rights era ... the story of the false imprisonment of **black boxer** Rubin "Hurricane" ...

## Bob Dylan's "Hurricane" Murders the Truth - Graphic Witness

[www.graphicwitness.com/carter/song.html](http://www.graphicwitness.com/carter/song.html)

Mr. Dylan takes poetic license with the facts throughout the **song**, particularly in his descriptions of what ... View his **boxing** record for 1965-66. ... But the jury that convicted Carter in 1976 had two voting **black** members, and a **black** legislator ...

Find needles in haystacks

# Example: Google

<http://www.google.com>

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bob dylan covered by black african musicians



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**List of artists who have covered Bob Dylan songs - Wikipedia**  
[https://en.wikipedia.org/.../List\\_of\\_artists\\_who\\_have\\_covered\\_Bob\\_Dylan\\_...](https://en.wikipedia.org/.../List_of_artists_who_have_covered_Bob_Dylan_...)  
Many major recording artists have covered Dylan's material, some even increasing its ... The Black Crowes, When the Night Comes Falling from the Sky.

**Bob Dylan - Wikipedia, the free encyclopedia**  
[https://en.wikipedia.org/wiki/Bob\\_Dylan](https://en.wikipedia.org/wiki/Bob_Dylan)  
Bob Dylan (/ˈdɪlən/; born Robert Allen Zimmerman, May 24, 1941) is an ... of Dylan's second album by the young African-American jazz producer, Tom Wilson. ... The song was widely recorded by other artists and became a hit for Peter, Paul ...

**The Freewheelin' Bob Dylan - Wikipedia, the free ...**  
[https://en.wikipedia.org/wiki/The\\_Freewheelin'\\_Bob\\_Dylan](https://en.wikipedia.org/wiki/The_Freewheelin'_Bob_Dylan)  
The Freewheelin' Bob Dylan's album cover. ... The speed and facility with which Dylan wrote topical songs attracted the attention of other musicians in the ... Columbia paired Dylan with a young, African-American jazz producer, Tom Wilson.

**Intellectual Property and Information Wealth: Copyright ...**  
<https://books.google.de/books?isbn=027598883X>  
Peter K. Yu - 2007 - Copyright musical works.59 Other musical traditions reflect the influence of jazz and blues, ... collaboration that incorporates musical styles from three Black South African genres. ' Jimi Hendrix's cover recording of the Bob Dylan song "All Along the ...

**How Many Roads: Black America Sings Bob Dylan - Various ...**  
[www.allmusic.com/.../how-many-roads-black-america-sings-bob-dylan-...](http://www.allmusic.com/.../how-many-roads-black-america-sings-bob-dylan-...)  
Bob Dylan is not a black artist; not thought of as an R&B/soul/blues artist; and not even especially thought of as a songwriter often covered by African Americans. ... compositions have garnered their share of interpretations by black musicians, ...

**Olatunji, Babatun - Bob Dylan Who's Who**  
[www.expectingrain.com/dok/who/s/olatumji.html](http://www.expectingrain.com/dok/who/s/olatumji.html)  
What Bob Dylan song references the African musician who sold the most ... Some people would also know Olatunji by Santana's booming cover of his song "Jingo. ... Black people cannot create the slick hair look that was popular at the time if ...

**10 musicians influenced by Bob Dylan who are better than ...**  
[www.salon.com/.../10\\_musicians\\_influenced\\_by\\_bob\\_dylan\\_who\\_are\\_b\\_...](http://www.salon.com/.../10_musicians_influenced_by_bob_dylan_who_are_b_...)  
Jun 14, 2014 - Bob Dylan may be the most overrated performer in the history of popular music. ... His cover of "All Along the Watchtower" is his most famous Dylan lift, and ...

(Trying to)  
Find needles in haystacks

## List of artists who have covered Bob Dylan songs

From Wikipedia, the free encyclopedia

**Bob Dylan** (born **Robert Allen Zimmerman** on May 24, 1941) is an American singer-songwriter, author, poet and painter who has been a major covered Dylan's material, some even increasing its popularity as is the case with The Byrds' cover version of "Mr. Tambourine Man".

This article is a list of musicians who have recorded and released their own version of a song written by Dylan.

**Contents** [hide]

- Sortable table of issued recordings
- See also
- References
- External links

## Sortable table of issued recordings [ edit ]

♪ *This list of songs or music-related items is incomplete; you can help by expanding it.*

Artist	Song Title
13th Floor Elevators	It's All Over Now, Baby Blue
54-40	Walkin' Down the Line
Lee Abramson	Masters of War
Adele	Make You Feel My Love
The Airborne Toxic Event	Boots of Spanish Leather

- Albion Band
- Albion Band
- Kris Allen
- Eddie Albert
- Eddie Albert
- Alpha Band
- Altan
- Wolfgang Ambros



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- Help
- About Wikipedia
- Community portal
- Recent changes
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- Tools
- What links here
- Related changes
- Upload file
- Special pages
- Permanent link
- Page information
- Wikidata item
- Cite this page

- Print/export
- Create a book
- Download as PDF
- Printable version

- Languages
- Afrikaans

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## Miriam Makeba

From Wikipedia, the free encyclopedia

**Zenzile Miriam Makeba** (4 March 1932 – 9 November 2008), nicknamed **Mama Africa**, was a South African singer and civil rights activist.

In the 1960s, she was the first artist from Africa to popularize African music around the world. She is best known for the song "Pata Pata", first recorded in 1957 and released in the U.S. in 1967. She recorded and toured with many popular artists, such as Harry Belafonte, Paul Simon, and her former husband Hugh Masekela.

Makeba campaigned against the South African system of apartheid. The South African government responded by revoking her passport in 1960 and her citizenship and right of return in 1963. As the apartheid system crumbled she returned home for the first time in 1990.

Makeba died of a heart attack on 9 November 2008 after performing in a concert in Italy organised to support writer Roberto Saviano in his stand against the Camorra, a mafia-like

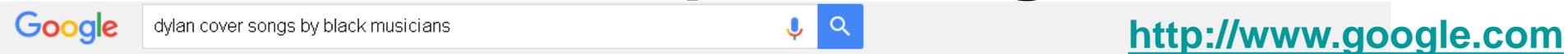


Makeba during a performance

### Background information

<b>Birth name</b>	Zenzile Miriam Makeba <sup>[1]</sup>
<b>Also known as</b>	Mama Africa
<b>Born</b>	4 March 1932 Prospect Township, Johannesburg, Union of South Africa
<b>Died</b>	9 November 2008 (aged 76) Castel Volturno, Italy
<b>Genres</b>	Marabi, World music, folk, pop, rock, jazz, Afro-soul
<b>Occupation(s)</b>	Singer-songwriter, actress
<b>Years active</b>	1954–2008
<b>Labels</b>	Manteca, RCA, Mercury Records, Kapp Records, CLM, Suave Music, Warner Bros., PolyGram, Drg, Stern's Africa, Kaz, Sonodisc

# Example: Google



<http://www.google.com>

[Web](#) [Videos](#) [News](#) [Images](#) [Shopping](#) [More](#) [Search tools](#)

About 3,260,000 results (0.56 seconds)

## List of artists who have covered Bob Dylan songs - Wikipedia

[https://en.wikipedia.org/.../List\\_of\\_artists\\_who\\_have\\_covered\\_Bob\\_Dylan\\_...](https://en.wikipedia.org/.../List_of_artists_who_have_covered_Bob_Dylan_...)  
Many major recording **artists** have **covered** Dylan's material, some even increasing its ... who have recorded and released their own version of a **song** written by **Dylan**. .... The **Black Crowes**, When the Night Comes Falling from the Sky.

## Cover version - Wikipedia, the free encyclopedia

[https://en.wikipedia.org/wiki/Cover\\_version](https://en.wikipedia.org/wiki/Cover_version) [▼](#)  
The Hendrix version, released six months after **Dylan's** original, became a Top 10 ... **Musicians** now play what they call "**cover versions**" (the reworking, updating or ... The **Black Crowes** formed in 1984, initially dedicated to reviving 1970s style ...

## 50 Best Bob Dylan Covers of All Time :: Music :: Lists :: Paste

[www.pastemagazine.com/.../50-best-bob-dylan-covers-of-all-time.html](http://www.pastemagazine.com/.../50-best-bob-dylan-covers-of-all-time.html) [▼](#)  
Apr 28, 2009 - I've listened to literally hundreds of **Dylan covers** over the course of the past week, ... We chose only one **song** from each of the **artists**, though some are mentioned .... Joan Osborne - "Man in the Long **Black Coat**" / Relish

## How Many Roads: Black America Sings Bob Dylan - Various ...

[www.allmusic.com/.../how-many-roads-black-america-sings-bob-dylan-...](http://www.allmusic.com/.../how-many-roads-black-america-sings-bob-dylan-...) [▼](#)  
Find album reviews, stream **songs**, credits and award information for How Many ... Bob **Dylan** is not a **black** artist; not thought of as an R&B/soul/blues artist; and ... of interpretations by **black musicians**, and 20 such **covers** from 1964-1990 were ...

## These 13 Singers Are the Definitive Cover Artists of Our ...

[mic.com/.../these-13-singers-are-the-definitive-cover-artists-of-our-gener...](http://mic.com/.../these-13-singers-are-the-definitive-cover-artists-of-our-gener...) [▼](#)  
Nov 12, 2014 - One of Eric Clapton's most recognizable **songs** is a Bob Marley **cover**. Jimi Hendrix played the definitive version of Bob **Dylan's** "All Along the ...

## 9 Songs that Prove Miley Cyrus Is the Best Cover Artist of ...

[mic.com/.../9-songs-that-prove-miley-cyrus-is-the-best-cover-artist-of-ou...](http://mic.com/.../9-songs-that-prove-miley-cyrus-is-the-best-cover-artist-of-ou...) [▼](#)  
Feb 28, 2014 - Seriously, the Outkast **cover** is bonkers. .... Her **versions** of classic **artists** like Dolly Parton, Bob **Dylan** and others prove not only that Cyrus can ...

## Strange Brew: Metaphors of Magic and Science in Rock Music

<https://books.google.de/books?isbn=1443850772>  
Victor Kennedy - 2013 - Social Science  
White **musicians covered** music originally played by **black musicians**, such as Eric Clapton's ... there are plenty of **songs** written by white songwriters and re-recorded by **black musicians**, such as Bob **Dylan's** "All Along the Watchtower" (1967), ...

(Trying to)  
Find needles in haystacks

# Example: Google



bob dylan songs in films



Web **Videos** Images News Shopping More Search tools

<http://www.google.com>

About 1,950,000 results (0.30 seconds)

## Main Title Theme (Billy) - Bob Dylan - YouTube



[www.youtube.com/watch?v=ZaTCYNOVrml](http://www.youtube.com/watch?v=ZaTCYNOVrml)  
May 25, 2013 - Uploaded by Random Acts  
From the **movie** and the soundtrack "Pat Garrett & Billy the Kid".  
My wife walked down the isle to this **song**.

## Bob Dylan - Girl from the North Country (Silver Linings ...



[www.youtube.com/watch?v=dyN-ya3rCPw](http://www.youtube.com/watch?v=dyN-ya3rCPw)  
Feb 6, 2013 - Uploaded by carstereobandits  
**Bob Dylan** - Girl from the North Country (Silver Linings Playbook)  
.... There was a **movie** with a **song** by my ...

## St. Vincent - Bill Murray Sings Bob Dylan - The Weinstein ...



[www.youtube.com/watch?v=Dgz88voETRM](http://www.youtube.com/watch?v=Dgz88voETRM)  
Oct 3, 2014 - Uploaded by The Weinstein Company  
St. Vincent - Bill Murray Sings **Bob Dylan** - The Weinstein  
Company ... a truly great **film** and a great **song** ...

## Bob Dylan: Dont Look Back - Clip - YouTube



[www.youtube.com/watch?v=VY4HtQ-XJQE](http://www.youtube.com/watch?v=VY4HtQ-XJQE)  
Oct 21, 2009 - Uploaded by Cinedigm  
Wanting make more than just a concert **film**, Pennebaker decided  
to seek out both the .... YouTube is the ...

## Top 10 Bob Dylan Songs - YouTube



[www.youtube.com/watch?v=65-\\_ocuGODM](http://www.youtube.com/watch?v=65-_ocuGODM)  
Nov 13, 2010 - Uploaded by RetroTop10  
Also check out my Top 10 **Bob Dylan** Albums video. ... MEMBER  
AND CURATOR OF INTERNATIONAL **FILM** ...

## Bob Dylan - Knocking on Heavens door (Movie version ...



[www.youtube.com/watch?v=laSIPQ-Bdc8](http://www.youtube.com/watch?v=laSIPQ-Bdc8)  
Jan 11, 2014 - Uploaded by Bobby Max  
**Bob Dylan** knocking on heavens door original version 1973 Pat  
Garrett and Billy the Kid Full **song Movie** ...

## Bob Dylan - The Man in Me (The Big Lebowski version ...



[www.youtube.com/watch?v=s10ldVRHRsw](http://www.youtube.com/watch?v=s10ldVRHRsw)  
Dec 19, 2008 - Uploaded by MUE114  
**Bob Dylan** - The man in me (The Big Lebowski version) opening  
credits. ... **movie** intro extended to be a ...

# Example: Google

<http://www.google.com>

The screenshot shows a YouTube video player for the song "Knocking on Heaven's Door" by Bob Dylan. The video is a black and white movie version from 1973, featuring Pat Garrett and Billy the Kid. A green call-to-action box in the bottom left of the video area says "CLICK HERE TO SUBSCRIBE PLEASE". The video player includes a search bar at the top, a play button, and a volume icon. Below the video, the title "Bob Dylan - Knocking on Heaven's door (Movie version 1973 - Pat Garrett and Billy the Kid)" is displayed, along with the channel name "Boby Max" and a "Subscribe" button with 2,175 subscribers. The video has 2,502,778 views, 13,214 likes, and 302 dislikes. The description includes the publication date (Jan 11, 2014) and a list of related artists: Bob Dylan, Guns N' Roses, and Pat Garrett and Billy the Kid. A "Music" section below the description lists the song "Knockin' on Heaven's Door" by Bob Dylan, available on Google Play and iTunes. A "SHOW MORE" link is also present. On the right side of the page, there is a "Up next" section with a list of recommended videos, including "Knockin' On Heaven's Door - Bob Dylan", "Pferdemesse in Verona", "Mix - Bob Dylan - Knocking on Heavens door (Movie version 1973 - Pat Garrett and Billy", "Guns N' Roses - Knocking on heaven's door - Legendado", "Bob Dylan- Knockin' on Heaven's Door 'Original'", "Pat Garrett and Billy the Kid Knocking on heavens door", "Top 10 Bob Dylan Songs", "Avril Lavigne - Knockin' on Heaven's Door", "The Animals - The House of the Rising Sun (The best video top 10 of all time)", and "The Doors - Riders On The Storm (ORIGINAL) - driving with Jim". A yellow box at the top right of the page contains the text "Implicit search: automatically generated recommendations".

**CLICK HERE TO SUBSCRIBE PLEASE**

**Bob Dylan - Knocking on Heaven's door (Movie version 1973 - Pat Garrett and Billy the Kid)**

Boby Max  
Subscribe 2,175

2,502,778

13,214 302

Published on Jan 11, 2014  
Bob Dylan knocking on heavens door original version 1973 Pat Garrett and Billy the Kid Full song Movie version  
Guns N Roses. Cover.Beautifull song of all time. Hq Hq Hq Hq

Music  
"Knockin' on Heaven's Door" by Bob Dylan (Google Play · iTunes)

SHOW MORE

ALL COMMENTS (701)

Add a public comment...

**Implicit search: automatically generated recommendations**

Up next Autoplay

- Knockin' On Heaven's Door - Bob Dylan  
by Canto dos Clássicos  
6,292,680 views
- Pferdemesse in Verona  
AD by Fieraovalli Verona  
6,349 views
- Mix - Bob Dylan - Knocking on Heavens door (Movie version 1973 - Pat Garrett and Billy
- Guns N' Roses - Knocking on heaven's door - Legendado  
by José Evaldo  
22,353,189 views
- Bob Dylan- Knockin' on Heaven's Door "Original"  
by NERGAL BELZEBU  
385,993 views
- Pat Garrett and Billy the Kid Knocking on heavens door  
by Zylxgammemovies  
103,584 views
- Top 10 Bob Dylan Songs  
by Wat ohMojo.com  
850,538 views
- Avril Lavigne - Knockin' on Heaven's Door  
by MrsSchultz  
3,109,071 views
- The Animals - The House of the Rising Sun (The best video top 10 of all time)  
by José Antonio  
20,111,020 views
- The Doors - Riders On The Storm (ORIGINAL) - driving with Jim  
by JimJohnRayRobby  
17,749,211 views

# Beyond (Standard) Google: From Information to Knowledge

Answer „knowledge queries“

(by researchers, journalists, market & media analysts, etc.)  
such as:

- ★ Politicians who are also scientists?
- ★ European composers who have won film music awards?
- ★ African singers who covered Dylan songs?
- ★ Relationships between  
John Lennon, Billie Holiday, Heath Ledger, King Kong?
- ★ Enzymes that inhibit HIV?  
Influenza drugs for teens with high blood pressure?
- ★ Photos of Buddhist temples at lakes  
with snow-covered mountains

.....

# Information Retrieval (IR) ≈ Search Engine Technology

## Advanced functionality:



**Different ways of asking**

**natural-language questions (QA):**

- **factual**
- **opinions**
- **how-to**

**Different ways of answering**

**find entities in contents:**  
**people, places, products, ...**

**Different kinds of digital contents**

- **semi-structured or streaming data**
- **multimodal contents (images, videos, ...)**

# Deep Question Answering:

## IBM Watson

(Jeopardy Quiz Show 14-16 Feb 2011)

This town is known as "Sin City" & its downtown is "Glitter Gulch"

**Q: Sin City ?**

→ movie, graphical novel, nickname for city, ...

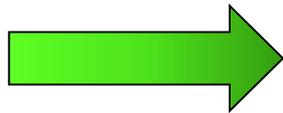
**A: Vegas ? Strip ?**

→ Vega (star), Suzanne Vega, Vincent Vega, Las Vegas, ...

→ comic strip, striptease, Las Vegas Strip, ...

This American city has two airports named after a war hero and a WW II battle

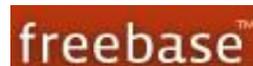
**question  
classification &  
decomposition**



**text corpora  
& knowledge  
back-ends**



WIKIPEDIA  
The Free Encyclopedia



D. Ferrucci et al.: Building Watson. AI Magazine, Fall 2010.  
IBM Journal of R&D 56(3/4), 2012: This is Watson.

# Demos

## Question Answering (natural questions)

- <http://www.wolframalpha.com>

## Semantic Search (crisper answers)

- <http://broccoli.cs.uni-freiburg.de/>
- <http://stics.mpi-inf.mpg.de>

## Image Search and Image-Text Tasks (more data)

- <http://www.bing.com/images/>
- <http://www.robots.ox.ac.uk/~vgg/research/on-the-fly/>
- <http://cs.stanford.edu/people/karpathy/deepimagesent/generationdemo/>
- <http://wang.ist.psu.edu/IMAGE/>

# Knowledge Engine WolframAlpha



when and where was bob dylan born?

**When and where was Bob Dylan born?**



[Examples](#) [Random](#)

Input interpretation:

Bob Dylan basic information

Result:

full name	Robert Allen Zimmerman
date of birth	Saturday, May 24, 1941 (age: 74 years)
place of birth	Duluth, Minnesota, United States

 Sources

 Download page

POWERED BY THE WOLFRAM LANGUAGE

# Knowledge Engine WolframAlpha



who was us president when bob dylan was born?



Examples ↻ Random

Assuming "bob dylan" is a person | Use as [a music act](#) instead

**Who was US president  
when Bob Dylan was born?**

Input interpretation:

United States President Bob Dylan date of birth

Result:

Show details

Franklin D. Roosevelt

Basic information:

official position	President (32 <sup>nd</sup> )
country	United States
political affiliation	Democratic
start date	04. March 1933 (82 years 7 months 16 days ago)
end date	12. April 1945 (70 years 6 months 8 days ago)
duration of leadership	12 years 1 month 8 days

# Knowledge Engine WolframAlpha



who was us president in bob dylan's birth year? ☆ ☰



☰ Examples ↻ Random

Assuming "bob dylan's" is a person | Use as [a music act](#) instead

**Who was US president in Bob Dylan's birth year?**

Input interpretation:

United States President Bob Dylan year of birth

Result:

Show details

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official position	President (32 <sup>nd</sup> )
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# Knowledge Engine WolframAlpha



who was the American president in bob dylan's birth year? ☆



Examples ↻ Random

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duration of leadership	12 years 1 month 8 days

# Knowledge Engine WolframAlpha



who was German chancellor when Angela Merkel was born?



**Who was chancellor of Germany when Angela Merkel was born?**

Input interpretation:

Germany | chancellor | Angela Merkel | date of birth

Result:

Konrad Adenauer

Basic information:

official position	Chancellor
start date	16. September 1949 (60 years 26 days ago)
end date	16. October 1963 (45 years 11 months 27 days ago)
duration	14 years 30 days



Chancellor of Germany

In office  
15 September 1949 – 16 October 1963

Preceded by Position established  
Allied military occupation, 1945-1949  
Count Lutz Schwerin von Krosigk (1945)  
Succeeded by Ludwig Erhard

Foreign Minister of Germany

In office  
15 March 1951 – 6 June 1955

Preceded by Count Lutz Schwerin von Krosigk (1945)  
Succeeded by Heinrich von Brentano

Mayor of Cologne

In office  
1917 – 1933

Preceded by Ludwig Theodor Ferdinand Max Wallraf

Succeeded by Günter Riesen  
In office  
1945 – 1945

Preceded by Robert Brandes  
Succeeded by Willi Suhn

Born 5 January 1876  
Cologne

Died 19 April 1967 (aged 91)  
Bad Honnef

Political party Centre Party (1906-1945)  
CDU (1945-1967)

Spouse(s) Emma Wejer  
Auguste (Gussie) Czapp

Alma mater University of Freiburg

# Knowledge Engine WolframAlpha



who was the spouse of the German chancellor when Angela Merkel was born?

Wolfram|Alpha isn't sure how to compute an answer from your input *Tips for good results »*

Who was the spouse of the chancellor of Germany when Angela Merkel was born?

### Related Wolfram|Alpha results



People:

- German chancellor when Angela Merkel was born  
information about a political leader
- Angela Merkel  
information about a person



Names:

- Angela  
information about a given name

# Knowledge Engine WolframAlpha



Which Bob Dylan songs are featured in films?

which bob dylan songs are featured in films?



Examples Random

Using closest Wolfram|Alpha interpretation: **bob dylan songs**



More interpretations: [featured](#)

Assuming "bob dylan" is a person | Use as [a music act](#) or [a music album](#) instead

Input interpretation:

music works

with

composer

Bob Dylan (musician)



# Demos

## Question Answering (natural questions)

- <http://www.wolframalpha.com>

## Semantic Search (crisper answers)

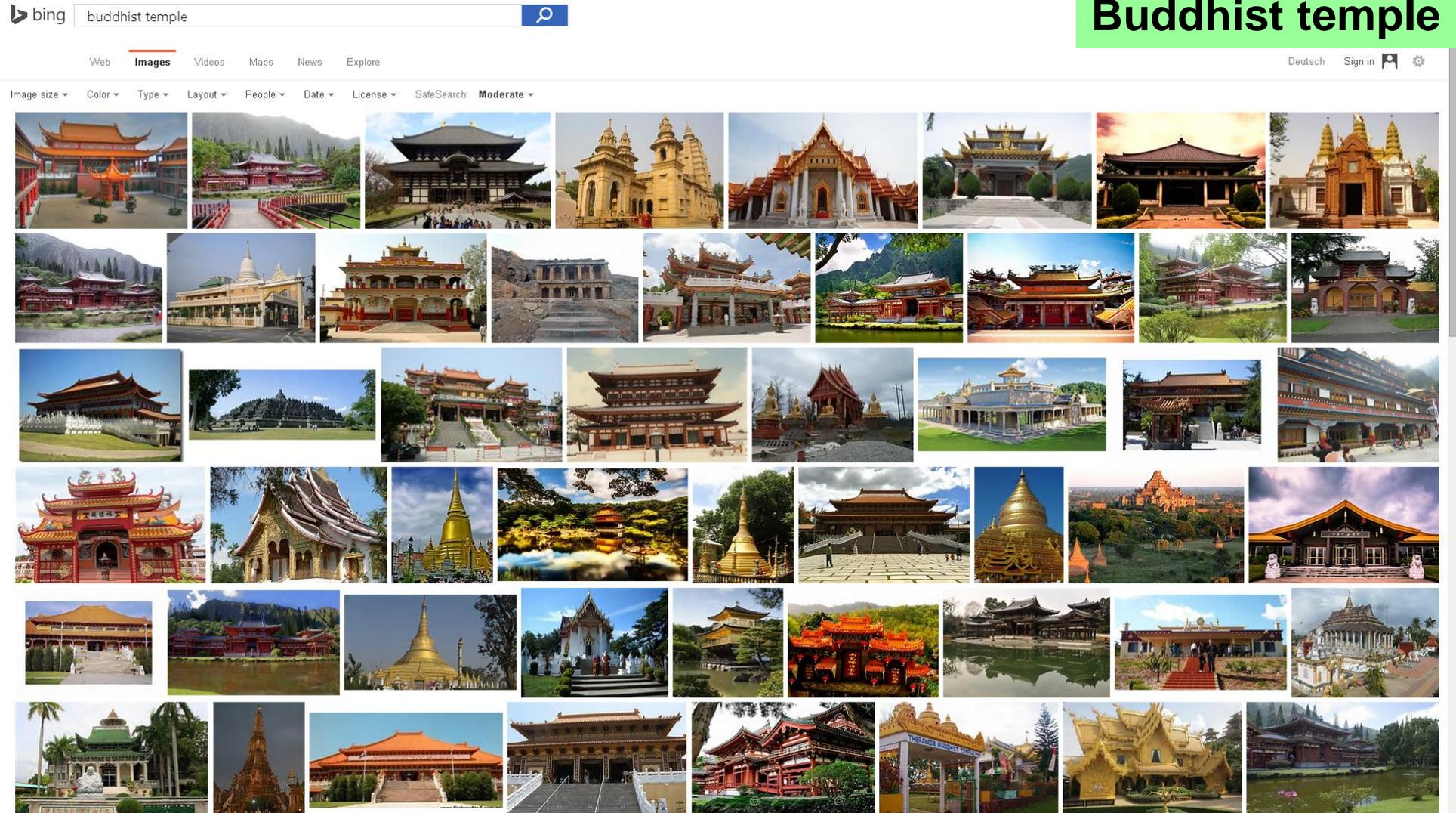
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- <http://stics.mpi-inf.mpg.de>

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- <http://cs.stanford.edu/people/karpathy/deepimagesent/generationdemo/>
- <http://wang.ist.psu.edu/IMAGE/>

# Internet Image Search

Buddhist temple



<http://www.bing.com/images/>

# Internet Image Search

bing buddhist temple

Buddhist temple

Web **Images** Videos Maps News Explore

Image size Color Type Layout People Date License SafeSearch: Moderate



File:Si Lanka Buddhist Temple (from Larong Tim 2192 x 1632 .jpg) en.wikipedia.org

<http://www.bing.com/images/>

# Internet Image Search

bing buddhist temple at lake

Web **Images** Videos Maps News Explore

Image size Color Type Layout People Date License SafeSearch: Moderate

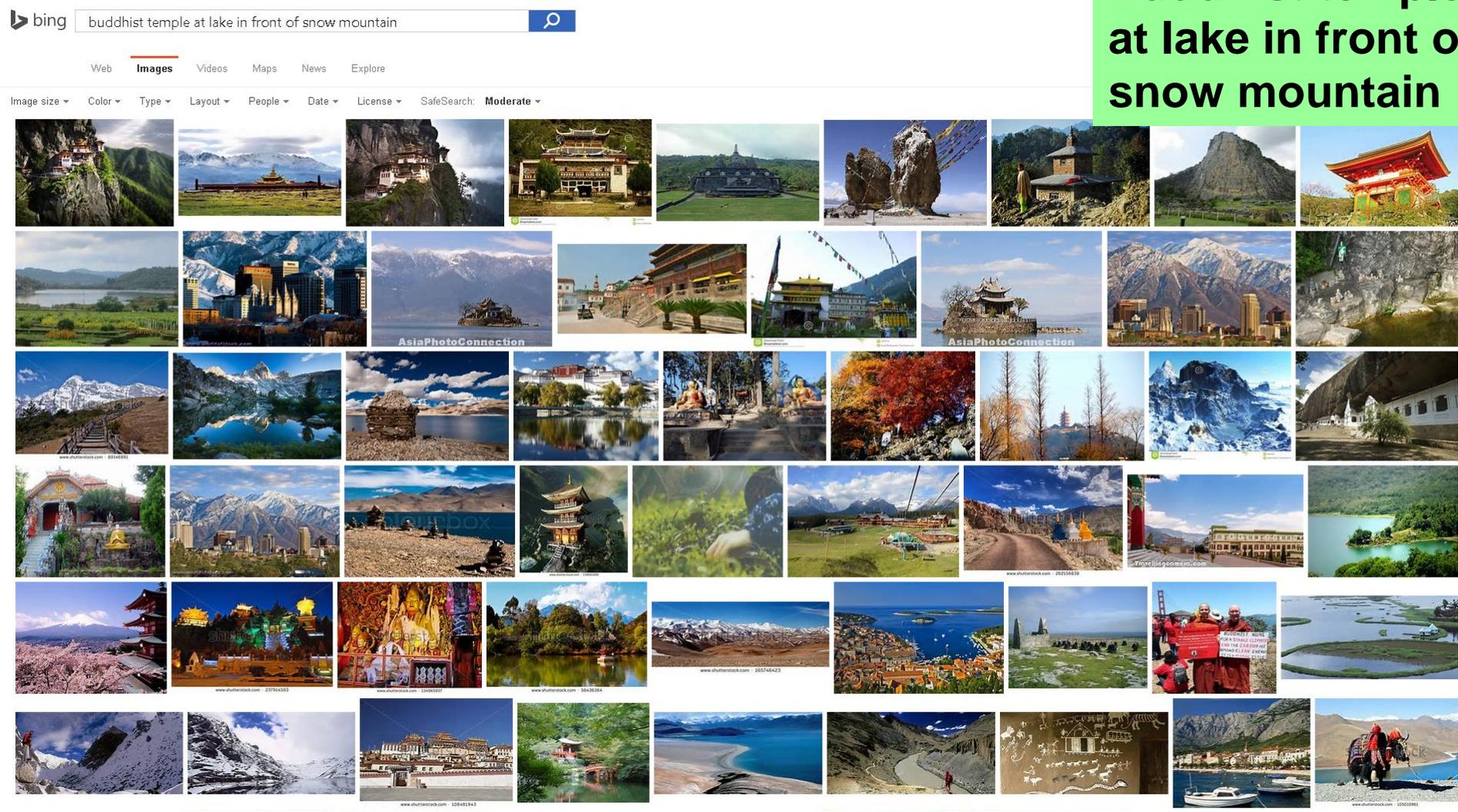
**Buddhist temple  
at lake**



<http://www.bing.com/images/>

# Internet Image Search

Buddhist temple  
at lake in front of  
snow mountain



<http://www.bing.com/images/>

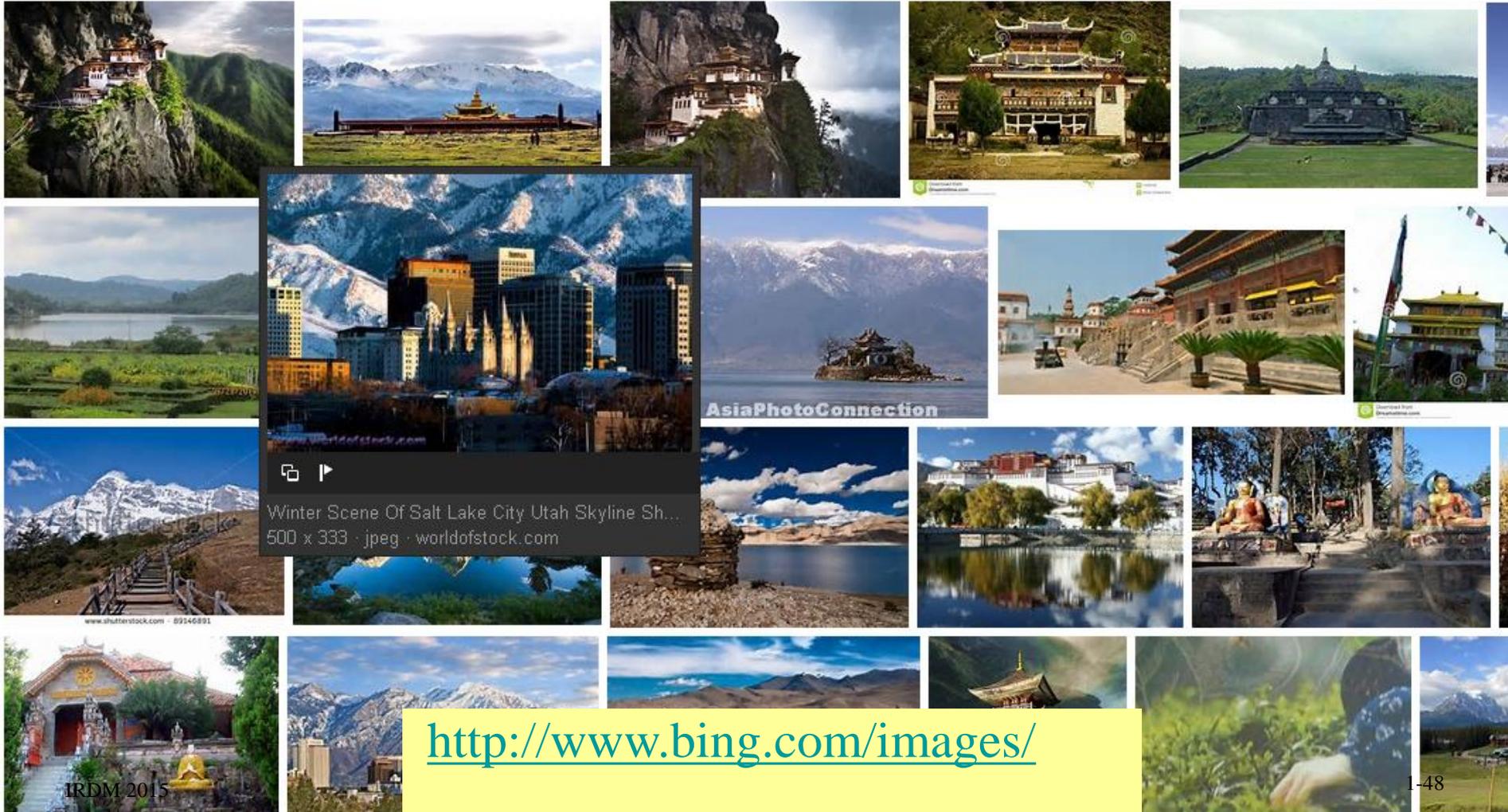
# Internet Image Search

**Buddhist temple  
at lake in front of  
snow mountain**

bing

Web **Images** Videos Maps News Explore

Image size Color Type Layout People Date License SafeSearch: **Moderate**



Winter Scene Of Salt Lake City Utah Skyline Sh...  
500 x 333 · jpeg · worldofstock.com

<http://www.bing.com/images/>

# Internet Image Search



buddhist temple at lake in front of snow mountain



Web

**Images**

Videos

Maps

News

Explore

visually similar images

Image size ▾

Color ▾

Type ▾

Layout ▾

People ▾

Date ▾

License ▾

SafeSearch: **Moderate** ▾



<http://www.bing.com/images/>

# Internet Image Search

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Web **Images** Maps News Videos More Search tools

Size Color Type Time Visually similar Usage rights More tools Clear

**visually similar images**



<http://www.google.com>