Information Access in Computer Science Research

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Meet Our Databases!

Looking for Research?

- **Google Scholar** is a web crawler (hey, that rhymes!)
- **Multidisciplinary databases** like Web of Science are good starting points for disciplinary *and* interdisciplinary research
- **Disciplinary databases** contain high-quality, relevant information for specific disciplines: we will look at IEEE Xplore

It all depends...

Google Scholar Use Cases

- “I don’t know where to start, so I can’t really craft a search strategy. I want to do a little exploring first.”
- “My professor mentioned a well-known study where a scientist swallowed Campylobacter bacteria to see if it would cause a peptic ulcer. I’m just going to type “Campylobacter ulcer” and will see if I get lucky.”
- “I’d like to find studies that used a particular instrument or research method; the details I’m interested in are probably in the Methods section.”
- “I want to find research which has cited an article I’m interested in, so I’m going to search for the exact citation.”

Google Scholar

time series dilation

Articles

About 400,000 results (0.07 sec)

Any time
Since 2022
Since 2021
Since 2018
Custom range...

Sort by relevance
Sort by date

Any type
Review articles

include patents
include citations

Create alert

Deep **dilation** on multimodality **time series** for human activity recognition
R Xi, M Li, M Hou, M Fu, H Qu, D Liu... - IEEE Access, 2018 - ieeexplore.ieee.org
... , we apply a **dilation** factor on ... **time**-scale dependence, inspired by the idea of **dilation** operation, we present a novel recurrent model to learn the temporal dependencies at different **time** ...
☆ Save 99 Cite Cited by 32 Related articles All 2 versions Web of Science: 22

[PDF] ieee.org
Full-Text @ UW

Structural health and stability assessment of high-speed railways via thermal **dilation** mapping with **time-series** InSAR analysis
X Qin, M Liao, L Zhang, M Yang - IEEE Journal of Selected ..., 2017 - ieeexplore.ieee.org
... Based on the conventional InSAR, various **time-series** InSAR ... over a long **time**, **time-series** InSAR technologies facilitate the ... of view, the existing **time-series** InSAR approaches are still ...
☆ Save 99 Cite Cited by 51 Related articles All 10 versions Web of Science: 36 »

[PDF] ieee.org

[HTML] A dynamic model of neurovascular coupling: implications for blood vessel **dilation** and constriction
Y Zheng, Y Pan, S Harris, S Billings, D Coca, J Berwick... - Neuroimage, 2010 - Elsevier
... The model output was the **time series** of the changes in regional cerebral blood flow (CBF). ... **dilation** and constriction. The complex temporal characteristics of the CBF **time series** were ...
☆ Save 99 Cite Cited by 46 Related articles All 10 versions Web of Science: 22

[HTML] sciencedirect.com
Full-Text @ UW

itsadug: Interpreting **time series** and autocorrelated data using GAMMs
J Van Rij, M Wieling, RH Baayen, D van Rijn - 2015 - research.rug.nl
... for **time** course data such as EEG, pupil **dilation**, gaze data (eye tracking), and articulography recordings, but also for behavioral data such as reaction times and response data. As ...
☆ Save 99 Cite Cited by 361 Related articles »

When to Use Something Other Than Google Scholar

- At the beginning of **your own research project**: where you want to gain a solid understanding of the context of your work.
- When **writing a literature review**: your job is to represent what's known, where researchers differ in viewpoints & findings, and perhaps where there are gaps in knowledge.

Consider the Implications of Google Scholar's Algorithm

- Do authors always cite another article because they agree with it?
- Do you think there's a tendency for the same articles to be cited over and over?
- Does this approach highlight recent innovations?
- Does this approach affect whose voices are heard?

Google Scholar

Objective: Connect you to the “top” references matching a natural language search statement.

Scope: “All” scholarly publications in all disciplines that are discoverable on the internet. Includes preprints and other publication types in addition to articles.

Transparency: Intentional black box. Proprietary algorithm for searching and relevancy ranking. No list of sources.

Web of Science + ACM-DL

Objective: Connect you to all references matching a search query. Queries may include discipline-specific subject headings, Boolean operators (AND, OR), and filters.

Scope: Sources typically selected by an editorial board to suit the scope of database. May include sources not otherwise discoverable on the internet.

Transparency: Database displays “search details” to show what terms were searched for and how they were combined. List of sources provided.

Google Scholar

Reproducibility: You typically can't view/review ALL references. References just get less and less relevant as you move from page to page. Less relevant references may or may not contain all of your search terms.

Results ranked differently for different people. Results ranked differently according to order of words in query.

What's Relevant? If it's a highly-cited article from a prestigious journal, it's ranked higher. Location of search terms and popularity also affect ranking.

Web of Science + ACM-DL

Reproducibility: ALL references matching criteria are presented.

Anyone conducting the same search at the same time retrieves the same results presented in the same order.

What's Relevant? If it meets the search criteria, you see it. Typically, results are displayed in chronological order.

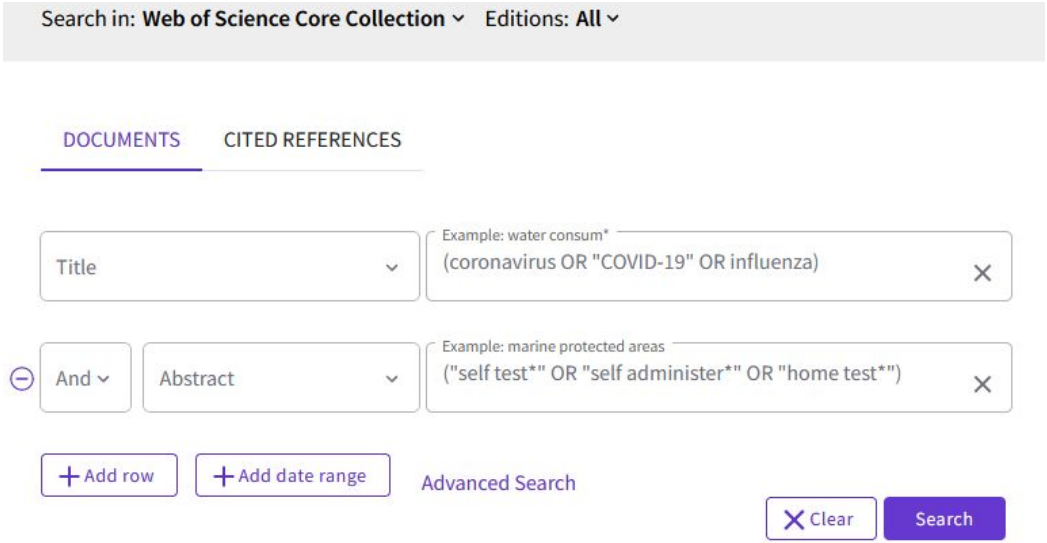
You can keep refining your query with search terms and filters to make the results meet YOUR criteria of what's relevant.

Web of Science Use Cases

You want to do a **reproducible** search.

You want to search **journals, book chapters,** and **conference abstracts** that have been **selected by an editorial board.**

You want to **define each of your search concepts thoroughly**.

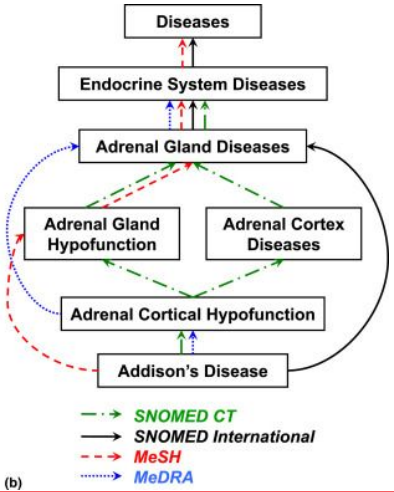


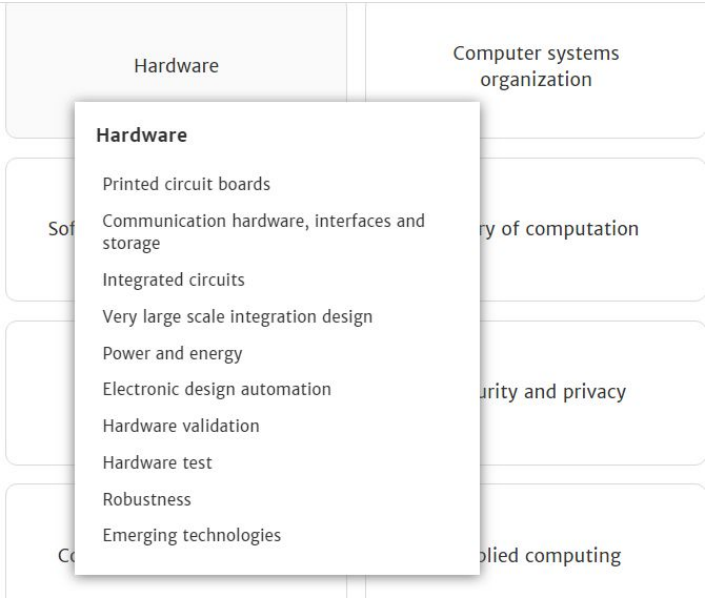
ACM Digital Library Features

- The journals and books that are indexed have been selected because they're **relevant for the discipline**.
- When searching, you can use **discipline-specific terminology**, such as "transference" (one meaning in psychology, another meaning in CS/math) **without capturing references that use the term differently**.
- It offers **subject-specific filters,** letting you refine your search by document type (review article, conference paper, etc.), date, and language.

Web of Science and ACM's Extra Strength:

- Articles are tagged with **database-specific subject headings**
  - This is helpful because it lets you filter content for specific terms.
  - They also let you search for groups of terms.





Result: A Thorough, Well-Defined, Reproducible Search

61 Results for: ***All: "dall-e"*** Edit Search Save Search RSS

Searched The ACM Full-Text Collection (691,580 records) | Expand your search to The ACM Guide to Computing Literature (3,482,242 records)

RESULTS VIDEOS PEOPLE Showing 1 - 20 of 61 Results

Select All per page: 10 **20** 50 Earliest

RESEARCH-ARTICLE
July 2021

On the effects of pruning on evolved neural controllers for soft robots

Giorgia Nadizar, Eric Medvet, Felice Andrea Pellegrino, Marco Zullich, Stefano Nichele

GECCO '21: Proceedings of the Genetic and Evolutionary Computation Conference Companion • July 2021, pp 1744–1752 • https://doi.org/10.1145/3449726.3463161

Artificial neural networks (ANNs) are commonly used for controlling robotic agents. For robots with many sensors and actuators, ANNs can be very complex, with many neurons and connections. Removal of neurons or connections, i.e., *pruning*, may be ...

5 90 Highlights Get Access

RESEARCH-ARTICLE
October 2021

Cycle-Consistent Inverse GAN for Text-to-Image Synthesis

Hao Wang, Guosheng Lin, Steven C. H. Hoi, Chunyan Miao

MM '21: Proceedings of the 29th ACM International Conference on Multimedia • October 2021, pp 630–638 • https://doi.org/10.1145/3474085.3475226

Conclusion

- **Web of Science** and **ACM Digital Library** are MUCH stronger than Google Scholar from a STEM research standpoint.

- Web of Science is stronger for **cross-disciplinary** research, but ACM is stronger for **CS-related** work. Both contain sufficiently comprehensive information for researchers, and from a CS perspective, this would be a good mix of databases.
    - Theoretically, a researcher could **start on ACM** for more specialized content but **look beyond using Web of Science**.

Questions?