






Using the library services

- Internet: evaluation of sources
- Use search engines effectively
- Some basic search techniques
- Choosing the appropriate source
- Computer science sources
 - Bibliographies and reference works
 - Data bases
 - Fulltext archives
- Sources of other disciplines
- Two cases



Evaluation of net sources - 1

- Is it real?
- Is it unaffected and independent?
- Time dependency
- Is it free from tendency?
- Examples
 - Google: *Cambodia pol pot killings* 
 - Google: *evolution theory darwinism* 
 - Google: *traveling salesman problem* 



Evaluation of net sources - 2

- Who is talking?
 - A well known organization
 - Public authorities
 - A private person
 - Somebody selling something?
- Updating and maintenance
 - Is the page dated? New or old?
 - Does the page contain dead links?



Evaluation of sources - 3

- Look at the URL:
 - .com = commercial/business(.co.uk)
 - .gov = US authorities
 - .org = organizations
 - .edu = US education institutions (.ac.uk)
 - .dep.no = Norwegian ministries
 - .uio.no, .ntnu.no, .uib.no, .uit.no (Norwegian universities)
- Is the page sponsored?



Use search engines effectively

- Google

- only up to ten words, the first word is considered the most important
- use phrases, not single words
- limit your search through the advanced search option
- click the "similar pages"-link
- exclude words or phrases, using "-"







Choosing the appropriate source

- What is your problem?
 - a special Java fix
 - a sorting algorithm
 - articles/books covering a subject
- What kind of answer do you want?
 - short precise definition
 - short introduction
 - serious high level treatment of a subject



Special reference works

- [Oxford Reference Online – Computing](#) 
- [MATHnetBASE](#) 
- [The Concise Oxford Dictionary of Mathematics](#) 
- [A Dictionary of Statistics \(Oxford Reference Library\)](#) 

Via <http://x-port.uio.no>



Bibliographies

- [The Collection of Computer Science Bibliographies](#)
 - 2 000 000 references in computer science.
- [The HCI Bibliography](#)
 - 29 000 references in the field "human-computer-interaction".
- [The Hypertext Bibliography Project](#)
 - Included in the CCSB. 50 300 references up to 1999.
- [Research Index](#)
 - "The NECI Scientific Literature Digital Library". 700 000 references with citings.
- [SIGGRAPH Bibliography Database Search](#)
 - 15 500 unique references in the field of computer graphics and interactive techniques.



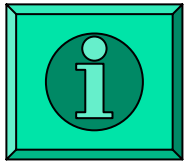
Reference- and citation databases

- Inspec
 - Physics, digital technique, telecommunication, control theory, information technology
- ISI Web of science (Science citation index)
 - Covers important journals in mathematics, computer science, and natural sciences
 - Citation database



Basic search techniques

- Using fields (author, subject, title, ...)
- Boolean (logical) operators
- Using controlled vocabularies / thesauri / classification systems
- Word stemming (truncation/wildcard)
- Phrases vs single words
- Index browsing



Inspec

- 7 000 000 references from 1965 –
- 400 000 added annually
- Search techniques
 - field searching
 - Thesaurus (controlled vocabulary)
 - Truncation (*, ?)
 - Operators (adj, and, or, not, near, with)

Via <http://x-port.uio.no>

Search Advanced Thesaurus Index Search History

How do I ...?

Type a term or phrase then click **Search**.

Suggest Search

No search limits set Change Clear

Find Terms: Anywhere

Limit Search to:

 Publication Year greater than 1997 Records with a URL field

Change Display

View databases being searched -->

Change

Show: All Results

Records 1 to 10 of 1068

Go To Record: 11

Clear Marked

Search #1 : e-learning

1 TI: Popularity-wise proxy caching for interactive streaming media

AU: Wei-Liu; Chun-Tung-Chou; Zongkai-Yang; Xu-Du

ED: Jha,S.; Hassanein,H.; Bulusu,N.; Frank,M.; Boukerche,A.; Hood,C.

SO: Proceedings.-29th-Annual-IEEE-International-Conference-on-Local-Computer-Networks.-LCN-2004. 2004: 250-7

PB: IEEE (Comput. Soc.), Los Alamitos, CA, USA

RT: Conference-Paper

AB: Most of the current proxy caching algorithms for streaming video media assume that users favor the beginning of the media object.

However, this assumption is questionable in highly interactive scenarios, such as **e-learning**, where some parts of the video other than the prefix can also be popular. A new segment-based proxy caching algorithm, named popularity-wise caching, is proposed for highly interactive streaming. It is designed to deal with arbitrary popularity distribution of media content. Simulations are performed using synthetic traces with different kinds and levels of user interactivity. The results show that the performance of current segment-based caching (such as exponential caching and soccer caching) degrade with increasing user interactivity, while popularity-wise caching can provide the lowest user startup latency for interactive requests and highest bandwidth saving for the backbone network.

IB: 0769522602

[Complete Record](#)

In Database: INSPEC 2004/12 Week 4 2004/12/19-2004/12/25.

2 TI: Proceedings. Eighth International Conference on Information Visualisation

ED: Banissi,-E.; Borner,-K.; Chen,-C.; Dastbaz,-M.; Clapworthy,-G.; Faiola,-A.; Izquierdo,-E.; Maple,-C.; Roberts,-J.; Moore,-C.; Ursyn,-A.; Zhang,-J.-J.

SO: 2004:

PB: IEEE Comput. Soc, Los Alamitos, CA, USA

RT: Conference-Proceedings

AB: The following topics are dealt with: information visualization; MediViz; GeoViz; MMViz; visual data mining; digital art; multimedia; human-computer interaction; graph theory applications; knowledge domain visualization; haptics; computer graphics; computer imaging; **e-learning**; Web semantics; Web visualization; augmented virtual reality; computer animation; argument visualization and sonification.

IB: 0769522602

Language and time period limits

SilverPlatter - WebSPIRS 5.0 - Microsoft Internet Explorer provided by Universitetet i Oslo

File Edit View Favorites Tools Help

Address [http://spirs.bibsys.no:8595/webspirs/start.ws?databases=5\(INSP\)](http://spirs.bibsys.no:8595/webspirs/start.ws?databases=5(INSP))

BIBSYS [about ERLWebSPIRS⁵](#)

Change Limits

Current Limits: (LA: INSP = ENGLISH)

Quick Limits **All Limits**

Frequently Used Limits

- LANGUAGE
- PUBLICATION YEAR
- RECORD TYPE
- UPDATE CODE

Other Limits

- COUNTRY OF PUBLICATION
- NUMBER OF REFERENCES
- SUBFILE
- TREATMENT CODE
- URLs etc

Set limits in your open databases so that you want from the list on the left, then set the limit value. Click **OK** when you have set the required limits.

LANGUAGE
INSPEC
Hold down Shift, Ctrl, or Command to select multiple items.

- CZECH
- DANISH
- DUTCH
- ENGLISH**
- ESPERANTO

SilverPlatter - WebSPIRS 5.0 - Microsoft Internet Explorer provided by Universitetet i Oslo

File Edit View Favorites Tools Help

Address [http://spirs.bibsys.no:8595/webspirs/start.ws?databases=5\(INSP\)](http://spirs.bibsys.no:8595/webspirs/start.ws?databases=5(INSP))

BIBSYS [about ERLWebSPIRS⁵](#)

Change Limits

Current Limits: (PY: INSP = 2000-2004) AND (LA: INSP = ENGLISH)

Quick Limits **All Limits**

Frequently Used Limits

- LANGUAGE
- PUBLICATION YEAR
- RECORD TYPE
- UPDATE CODE

Other Limits

- COUNTRY OF PUBLICATION
- NUMBER OF REFERENCES
- SUBFILE
- TREATMENT CODE
- URLs etc

Set limits in your open databases so that you want from the list on the left, then set the limit value. Click **OK** when you have set the required limits.

PUBLICATION YEAR
INSPEC
From to

Search Advanced Thesaurus Index Search History

How do I ...?

Type a term or phrase then click **Search**.

Suggest Search

⚠ Search Limits are set [Change](#) [Clear](#)

Find Terms: [Anywhere](#) ▾

Limit Search to:

Publication Year greater than 1997

Records with a URL field

Change Display

View databases being searched -->

Change

Show: All Results ▾

Records 1 to 10 of 990

Go To Record: 11

Clear Marked

Search #2 : e-learning and (LA:INSP = ENGLISH) and (PY:INSP = 2000-2004)

1 TI: Popularity-wise proxy caching for interactive streaming media**AU:** Wei-Liu; Chun-Tung-Chou; Zongkai-Yang; Xu-Du**ED:** Jha,S.; Hassanein,H.; Bulusu,N.; Frank,M.; Boukerche,A.; Hood,C.**SO:** Proceedings.-29th-Annual-IEEE-International-Conference-on-Local-Computer-Networks.-LCN-2004. 2004: 250-7**PB:** IEEE (Comput. Soc.), Los Alamitos, CA, USA**RT:** Conference-Paper

AB: Most of the current proxy caching algorithms for streaming video media assume that users favor the beginning of the media object. However, this assumption is questionable in highly interactive scenarios, such as **e-learning**, where some parts of the video other than the prefix can also be popular. A new segment-based proxy caching algorithm, named popularity-wise caching, is proposed for highly interactive streaming. It is designed to deal with arbitrary popularity distribution of media content. Simulations are performed using synthetic traces with different kinds and levels of user interactivity. The results show that the performance of current segment-based caching (such as exponential caching and soccer caching) degrade with increasing user interactivity, while popularity-wise caching can provide the lowest user startup latency for interactive requests and highest bandwidth saving for the backbone network.

IB: 0769522602[Complete Record](#) ▾

In Database: INSPEC 2004/12 Week 4 2004/12/19-2004/12/25.

2 TI: Proceedings. Eighth International Conference on Information Visualisation**ED:** Banissi,-E.; Borner,-K.; Chen,-C.; Dastbaz,-M.; Clapworthy,-G.; Faiola,-A.; Izquierdo,-E.; Maple,-C.; Roberts,-J.; Moore,-C.; Ursyn,-A.; Zhang,-J.-J.**SO:** 2004:**PB:** IEEE Comput. Soc, Los Alamitos, CA, USA**RT:** Conference-Proceedings

AB: The following topics are dealt with: information visualization; MediViz; GeoViz; MMViz; visual data mining; digital art; multimedia; human-computer interaction; graph theory applications; knowledge domain visualization; haptics; computer graphics; computer imaging; **e-learning**; Web semantics; Web visualization; augmented virtual reality; computer animation; argument visualization and sonification.

ID: 0769524770

Search Advanced Thesaurus Index Search History

How do I ...?

Type a term or phrase then click **Search**.

Suggest Search

⚠ Search Limits are set Change Clear

Find Terms: Anywhere

Limit Search to:

 Publication Year greater than 1997 Records with a URL field

View databases being searched -->

Change

Record 1 of 990

Go To: 2

Show All Results

In Database: INSPEC 2004/12 Week 4 2004/12/19-2004/12/25 **TITLE:** Popularity-wise proxy caching for interactive streaming media**AUTHOR:** [Wei-Liu](#); [Chun-Tung-Chou](#); [Zongkai-Yang](#); [Xu-Du](#)**AUTHOR AFFILIATION:** Dept. of Electron. & Inf. Eng, Huazhong Univ. of Sci. & Technol., China**EDITOR:** Jha,S.; Hassanein,H.; Bulusu,N.; Frank,M.; Boukerche,A.; Hood,C.**SOURCE:** [Proceedings -29th-Annual-IEEE-International-Conference-on-Local-Computer-Networks.-LCN-2004](#), 2004: 250-7**PUBLISHER:** IEEE (Comput. Soc.), Los Alamitos, CA, USA**NUMBER OF PAGES:** xxx+781**COUNTRY OF PUBLICATION:** USA**RECORD TYPE:** Conference-Paper**CONFERENCE DETAILS:** Proceedings. 29th Annual IEEE International Conference on Local Computer Networks. LCN 2004. 16-18 Nov. 2004 Tampa, FL, USA [IEEE Comput. Soc.; IEEE Comput. Soc. Tech. Comm. on Comput. Commun]**LANGUAGE:** English

ABSTRACT: Most of the current proxy caching algorithms for streaming video media assume that users favor the beginning of the media object. However, this assumption is questionable in highly interactive scenarios, such as **e-learning**, where some parts of the video other than the prefix can also be popular. A new segment-based proxy caching algorithm, named popularity-wise caching, is proposed for highly interactive streaming. It is designed to deal with arbitrary popularity distribution of media content. Simulations are performed using synthetic traces with different kinds and levels of user interactivity. The results show that the performance of current segment-based caching (such as exponential caching and soccer caching) degrade with increasing user interactivity, while popularity-wise caching can provide the lowest user startup latency for interactive requests and highest bandwidth saving for the backbone network.

NUMBER OF REFERENCES: 14**DESCRIPTORS:** [cache-storage](#); [interactive-video](#); [video-streaming](#)**IDENTIFIERS:** [popularity-wise-caching](#); [popularity-wise-proxy-caching](#); [interactive-streaming-media](#); [streaming-video-media](#); **e-learning**; [segment-based-proxy-caching](#); [arbitrary-popularity-distribution](#); [exponential-caching](#); [soccer-caching](#); [startup-latency](#); [interactive-requests](#)**CLASSIFICATIONS:** B6430G-Video-on-demand-and-video-servers**CLASSIFICATION CODES:** B64; B6430G; B6**SUBFILE:** [Electrical-and-Electronic-Engineering](#)



Type a term then click **Go To Terms** to see equivalent terms.

Search Limits are set

Term:

View databases being searched -->

By 5 Terms

Select the check box next to one or more subject headings:
 Click **Search Marked** to search for the marked headings.
 Click **Explode Marked** to search for the marked and narrower headings.
 Click on a subject heading to display broader, narrower and related subject headings.

Term	Subject Heading
DZ	<input type="checkbox"/> DZ stars, see white dwarfs
EAR	<input type="checkbox"/> ear
	<input type="checkbox"/> ear protection
EARLY	<input type="checkbox"/> early Universe, see cosmology
EARMUFFS	<input type="checkbox"/> earmuffs, see ear protection
EARPHONES	<input type="checkbox"/> earphones

Search Advanced **Thesaurus** Index Search History

How do I ...?

Type a term then click **Go To Terms** to see equivalent terms.⚠ Search Limits are set Term:

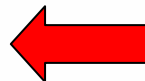
View databases being searched -->

By 5 Terms

Select the check box next to one or more subject headings:

Click **Search Marked** to search for the marked headings.Click **Explode Marked** to search for the marked and narrower headings.

Click on a subject heading to display broader, narrower and related subject headings.

Term	Subject Heading
LEARNING	<input type="checkbox"/> competitive learning, see unsupervised learning
	<input type="checkbox"/> computer aided learning, see computer aided instruction 
	<input type="checkbox"/> distance learning
	<input type="checkbox"/> example-based learning, see learning by example
	<input type="checkbox"/> Hebbian learning
	<input type="checkbox"/> incremental learning, see learning artificial intelligence
	<input type="checkbox"/> inductive learning, see learning by example
	<input type="checkbox"/> learning artificial intelligence
	<input type="checkbox"/> learning automata
	<input type="checkbox"/> learning by example
	<input type="checkbox"/> learning by experimentation, see heuristic programming
	<input type="checkbox"/> learning systems
	<input type="checkbox"/> life long learning, see continuing professional development



Search Advanced **Thesaurus** Index Search History

How do I ...?

Type a term then click **Go To Terms** to see equivalent terms.

No search limits set Change Clear

Term: **Go To Terms**



Change Display

View databases being searched --> Change

Clear Marked Search Marked Explode Marked Back

Subject: computer aided instruction

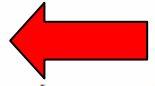
SCOPE NOTE: Introduced: January 1971

Previously indexed under: teaching

Related Classification(s): A0150H (Instructional computer use for education); C7810C (Computer-aided instruction); D2030 (Education and training IT applications); E0250 (Education and training); E0410 (Information technology applications)

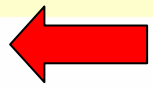
USED FOR: computer aided learning; teaching machines

To search for the subject, or one or more terms, select the check boxes next to each one then click **Search Marked**. Click on a term to see more information.



Subject

computer aided instruction



More Specific (narrower) terms

- [computer based training](#)
- [courseware](#)
- [intelligent tutoring systems](#)

Less Specific (broader) terms

Search Advanced **Thesaurus** Index Search History

How do I ...?

Type a term then click **Go To Terms** to see equivalent terms.

No search limits set Change Clear

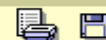
Term:

View databases being searched -->

Show: All Results

Records 1 to 10 of 29849

Go To Record: 11

**Search #3** : "computer-aided-instruction" in DE **1 TI: RO-MAN 2004. 13th IEEE International Workshop on Robot and Human Interactive Communication (IEEE Catalog No.04TH8759)****SO:** 2004:**PB:** IEEE, Piscataway, NJ, USA**RT:** Conference-Proceedings**AB:** The following topics are dealt with: artificial emotion of face robot; psychology in human-robot communication; SVM-based emotion recognition; omni-directional wheelchair; camera images for mobile robot teleoperation; hidden Markov model; associative memory using chaotic neural network; optimal interactive man-robot systems; basic dance training system with mobile robots; feature extraction for face detection and recognition; remotely controlled autonomous robot; video conference system and virtual haptic interfaces.**IB:** 0780385705[Complete Record](#)

In Database: INSPEC 2004/12 Week 4 2004/12/19-2004/12/25.

 2 TI: Content structure discovery in educational videos using shared structures in the hierarchical hidden Markov**AU:** Phung,-D.-Q.; Bui,-H.-H.; Venkatesh,-S.**ED:** Fred,-A.; Caelli,-T.; Duin,-R.-P.-W.; Campilho,-A.; de-Ridder,-D.**SO:**

Structural,-Syntactic-and-Statistical-Pattern-Recognition.-Joint-IAPR-International-Workshops-SSPR-2004-and-SPR-2004.-P 2004: 1155-63

PB: Springer-Verlag, Berlin, Germany**RT:** Conference Paper



Search | Advanced | Thesaurus | Index | **Search History** | How do I ...?

Type a term or phrase then click **Search**.

Display intermediate results for each term
 Display results by database

Search

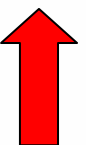
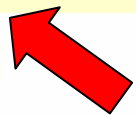
No search limits set



Change Display View databases being searched -->

Show: Search History Selected Searches: Combine and search using

Search	Results	Display	Create SDI
<input checked="" type="checkbox"/> #4 "distance-learning" in DE	4718		
<input checked="" type="checkbox"/> #3 "computer-aided-instruction" in DE	29849		
<input type="checkbox"/> #2 e-learning and (LA:INSP = ENGLISH) and (PY:INSP = 2000-2004)	990		
<input type="checkbox"/> #1 e-learning	1068		





Type a term or phrase then click **Search**.

No search limits set

- Display intermediate results for each term
- Display results by database

View databases being searched -->

Show: Selected Searches: Combine and search using

Search	Results	Display	Create SDI
<input type="checkbox"/> #5 ("distance-learning" in DE) and ("computer-aided-instruction" in DE)	1729		
<input type="checkbox"/> #4 "distance-learning" in DE	4718		
<input type="checkbox"/> #3 "computer-aided-instruction" in DE	29849		
<input type="checkbox"/> #2 e-learning and (LA:INSP = ENGLISH) and (PY:INSP = 2000-2004)	990		
<input type="checkbox"/> #1 e-learning	1068		



Search Advanced **Thesaurus** Index Search History

How do I ...?

Type a term then click **Go To Terms** to see equivalent terms.No search limits set Term:

Change Display

View databases being searched -->

By 5 Terms

Select the check box next to one or more subject headings:

Click **Search Marked** to search for the marked headings.Click **Explode Marked** to search for the marked and narrower headings.

Click on a subject heading to display broader, narrower and related subject headings.

Term	Subject Heading
MULTIMEDIA	<input checked="" type="checkbox"/> multimedia communication
	<input type="checkbox"/> multimedia computing
	<input checked="" type="checkbox"/> multimedia databases
	<input type="checkbox"/> multimedia servers
	<input type="checkbox"/> multimedia systems
	<input type="checkbox"/> multimedia terminals, see multimedia communication
	<input type="checkbox"/> multimedia terminals, see telecommunication terminals
MULTIMETERS	<input type="checkbox"/> digital multimeters
	<input type="checkbox"/> multimeters
MULTIPACTORS	<input type="checkbox"/> multipactors, see microwave switches
MULTIPATH	<input type="checkbox"/> multipath channels
MULTIPERIPHERAL	<input type="checkbox"/> multiperipheral models



Search Advanced Thesaurus Index **Search History**

How do I ...? ▼

Type a term or phrase then click **Search**. No search limits set

Display intermediate results for each term
 Display results by database

View databases being searched -->

Show: Search History ▼ Selected Searches: Combine and search using

Search	Results	Display	Create SDI
<input type="checkbox"/> #7 ("distance-learning" in DE) and ("computer-aided-instruction" in DE) and ("multimedia-communication" in DE) or ("multimedia-databases" in DE)	52	<input checked="" type="button" value="Display"/>	<input type="button" value="SDI"/>
<input type="checkbox"/> #6 ("multimedia-communication" in DE) or ("multimedia-databases" in DE)	15297	<input type="button" value="Display"/>	<input type="button" value="SDI"/>
<input type="checkbox"/> #5 ("distance-learning" in DE) and ("computer-aided-instruction" in DE)	1729	<input type="button" value="Display"/>	<input type="button" value="SDI"/>
<input type="checkbox"/> #4 "distance-learning" in DE	4718	<input type="button" value="Display"/>	<input type="button" value="SDI"/>
<input type="checkbox"/> #3 "computer-aided-instruction" in DE	29849	<input type="button" value="Display"/>	<input type="button" value="SDI"/>
<input type="checkbox"/> #2 e-learning and (LA:INSP = ENGLISH) and (PY:INSP = 2000-2004)	990	<input type="button" value="Display"/>	<input type="button" value="SDI"/>
<input type="checkbox"/> #1 e-learning	1068	<input type="button" value="Display"/>	<input type="button" value="SDI"/>

Search Advanced Thesaurus Index **Search History**

How do I ...?

Type a term or phrase then click **Search**.

No search limits set

Display intermediate results for each term
 Display results by database

View databases being searched -->

Show: **Records 1 to 10 of 52** Go To Record:

Search #7 : (("distance-learning" in DE) and ("computer-aided-instruction" in DE)) and (("multimedia-communication" in DE) or ("multimedia-databases" in DE))

1 TI: Media and metadata management for capture and access systems in electronic lecturing environments

AU: Stewart,-A.; Wolf,-P.; Hemmje,-M.

SO: Proceedings-2003-International-Conference-on-Multimedia-and-Expo-Cat.-No.03TH8698. 2003: II-685-8 vol.2

PB: IEEE, Piscataway, NJ, USA

RT: Conference-Paper

AB: One of the main challenges facing Web-based multimedia content creators today is the development of cost-effective digital media content for courseware that is reusable and interoperable. Given this, we propose the design and implementation of a model to manage the multimedia and metadata within a system of related topics in a course that is delivered via electronic lectures. This model not only supports the re-purposing and interchange of a course's digital media content, but also preserves the semantic dependencies and associated media-mapping, of pre-requisite and co-requisite knowledge within a course. Coarse grain or topic-based segmentations of an electronic lecture are used as building blocks to automatically create new, media-rich, electronic lecture experiences of interest to a user and subject to the constraints imposed by the model.

IB: 0780379659

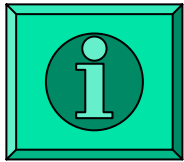
[Complete Record](#)

In Database: INSPEC 2004/07-2004/11.

2 TI: Distance learning course development with patterns

AU: Chang,-F.-C.-I.

SO: Journal of Applied Systems Studies. Nov. 2001: 2(3): 438-54



ISI Web of Knowledge

- Science citation index
 - 5900 journals in mathematics and science are analyzed
- Includes also:
 - Social Sciences Citation Index
 - Arts & Humanities Citation Index
- Search techniques
 - Operators (and, or, not, same)
 - Truncation (*, ?, \$)
 - Author search (Last name and initials)
 - Limits (language and document type)

Via <http://x-port.uio.no>



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Journal performance metrics, including Impact Factor

Searchable Database Products

Web of Science

Science Citation Index Expanded
Social Sciences Citation Index
Arts & Humanities Citation Index



Other Resources

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Author biographies and bibliographies

www.thomsonisi.com

Thomson ISI's Web site

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Social Sciences Citation Index® (SSCI®)

Arts & Humanities Citation Index® (A&HCI®)

[Information for New Users](#)

Select a search option:

Quick search:

GO

Example: chess AND comput*

GENERAL SEARCH

Search by topic, author, journal, or address.

CITED REFERENCE SEARCH

Search for articles that cite an author or work.

ADVANCED SEARCH

Search using complex queries including field tags and set combinations.

OPEN SAVED SEARCH

Open a previously saved search history.

Select database(s) and timespan:

Citation Databases:

- Science Citation Index Expanded (SCI-EXPANDED)--1945-present
- Social Sciences Citation Index (SSCI)--1956-present
- Arts & Humanities Citation Index (A&HCI)--1975-present

Latest (updated January 12, 2005)

Year

From to (default is all years)

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TUTORIAL

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- CITED REF SEARCH
- SEARCH HISTORY
- ADVANCED SEARCH

General Search

[>> View your search history/combine sets](#)

Selected database(s) and timespan:

Databases=SCI-EXPANDED; Timespan=1945-2005

CHANGE SETTINGS

Enter terms or phrases separated by the operators AND, OR, NOT, or SAME, and then press SEARCH. The search will be added to the search history. [[>> View your search history](#)]

SEARCH CLEAR

TOPIC: Enter one or more terms. Searches within article titles, keywords, or abstracts.

Example: neural network* AND ozone ([More examples](#))

Title only

AUTHOR: Enter one or more author names (see [author index](#)).

Example: O'BRIAN C* OR OBRIAN C*



GROUP AUTHOR: Enter one or more group names (see [group author index](#)).

Example: CERN

SOURCE TITLE: Enter full journal titles (see [full source titles list](#)).

Example: Cancer* OR Journal of Cancer Research and Clinical Oncology

ADDRESS: Enter abbreviated terms from an author's affiliation (use [abbreviations help](#)).

Example: Yale Univ SAME hosp

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|---------------|----------------------------|
| All languages | All document types |
| English | Article |
| Afrikaans | Abstract of Published Item |

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Search Results -- Summary

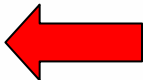
AU=(knuth de)
 DocType=All document types; Language=All languages; Database=SCI-EXPANDED; Timespan=1945-2005

Search within results:

135 results found (Set #1)
 Records 1 -- 10

Use the checkboxes to select individual records for marking, then click Submit Marks to add them to the Marked List.

- 1. **Knuth DE, Ruskey R**
[Efficient coroutine generation of constrained gray sequences](#)
 LECTURE NOTES IN COMPUTER SCIENCE 2635: 183-208 2004
 Times Cited: 0
- 2. **Knuth DE**
[Robert W Floyd, in memoriam](#)
 IEEE ANNALS OF THE HISTORY OF COMPUTING 26 (2): 75-83 APR-JUN 2004
 Times Cited: 0
- 3. **Knuth DE**
[A Fibonacci-Lucas extremum](#)
 AMERICAN MATHEMATICAL MONTHLY 109 (8): 762-763 OCT 2002
 Times Cited: 0
- 4. **Knuth DE**
[MMIX](#)
 LECTURE NOTES IN COMPUTER SCIENCE 1750: 2+ 1999
 Times Cited: 0
- 5. **Knuth DE**
[Three binomial convolutions](#)
 SIAM REVIEW 40 (4): 990-991 NOV 19 1998
 Times Cited: 0
- 6. **Knuth DE**
[Linear probing and graphs](#)
 ALGORITHMICA 22 (4): 561-568 DEC 1998
 Times Cited: **11**
- 7. **Knuth DE**
[Aztec diamonds, checkerboard graphs, and spanning trees](#)
 JOURNAL OF ALGEBRAIC COMBINATORICS 6 (3): 253-257 JUL 1997
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Full Record

◀ Record 6 of 135 (Set #1) ▶

Title: Linear probing and graphs

Author(s): Knuth DE

Source: ALGORITHMICA 22 (4): 561-568 DEC 1998

Document Type: Article

Language: English

Cited References: 12 **Times Cited:** 11 ⓘ

Abstract: Mallows and Riordan showed in 1968 that labeled trees with a small number of inversions are related to labeled graphs that are connected and sparse. Wright enumerated sparse connected graphs in 1977, and Kreweras related the inversions of trees to the so-called "parking problem" in 1980. A combination of these three results leads to a surprisingly simple analysis of the behavior of hashing by linear probing, including higher moments of the cost of successful search.

Author Keywords: linear probing; hashing; labeled trees; inversions; parking problem; sparse graphs

Addresses: Knuth DE (reprint author), Stanford Univ, Dept Comp Sci, Stanford, CA 94305 USA
Stanford Univ, Dept Comp Sci, Stanford, CA 94305 USA

Publisher: SPRINGER VERLAG, 175 FIFTH AVE, NEW YORK, NY 10010 USA

Subject Category: COMPUTER SCIENCE, SOFTWARE ENGINEERING; MATHEMATICS, APPLIED

IDS Number: 139NE

ISSN: 0178-4617

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Algorithmica (1998) 22: 561–568

Algorithmica

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Linear Probing and Graphs

D. E. Knuth¹

Dedicated to Philippe Patrick Michel Flajolet

Abstract. Mallows and Riordan showed in 1968 that labeled trees with a small number of inversions are related to labeled graphs that are connected and sparse. Wright enumerated sparse connected graphs in 1977, and Kreweras related the inversions of trees to the so-called “parking problem” in 1980. A combination of these three results leads to a surprisingly simple analysis of the behavior of hashing by linear probing, including higher moments of the cost of successful search.

Key Words. Linear probing, Hashing, Labeled trees, Inversions, Parking problem, Sparse graphs.

Introduction. The well-known algorithm of *linear probing* for n items in $m > n$ cells can be described as follows: Begin with all cells $(0, 1, \dots, m - 1)$ empty; then, for $1 \leq k \leq n$, insert the k th item into the first nonempty cell in the sequence h_k ,

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Title: Linear probing and graphs

Author(s): Knuth DE

Source: ALGORITHMICA 22 (4): 561-568 DEC 1998

Document Type: Article

Language: English

Cited References: [12](#) **Times Cited:** [11](#) ⓘ

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Publisher: SPRINGER VERLAG, 175 FIFTH AVE, NEW YORK, NY 10010 USA

Subject Category: COMPUTER SCIENCE, SOFTWARE ENGINEERING; MATHEMATICS, APPLIED

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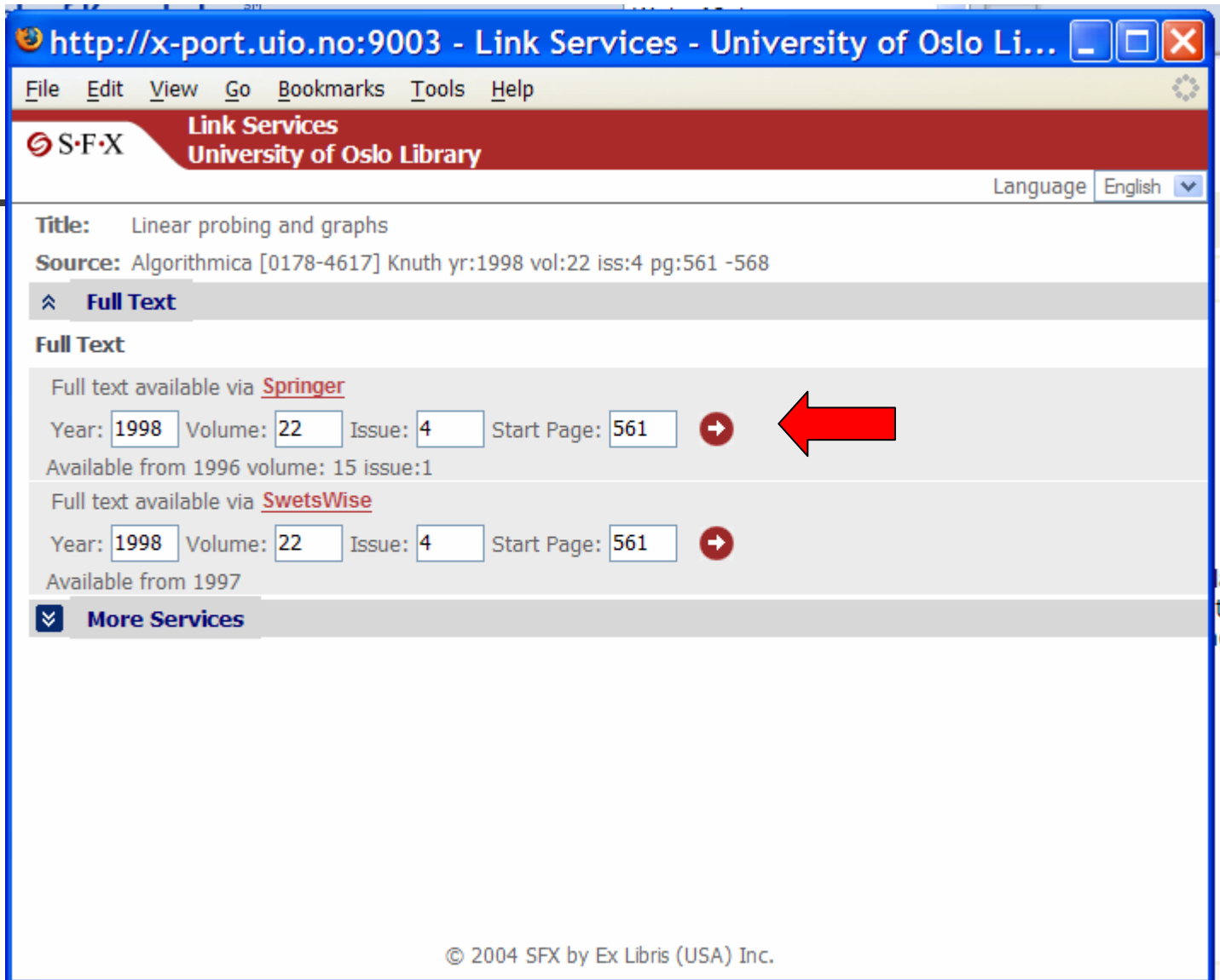
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Language English

Title: Linear probing and graphs
Source: Algorithmica [0178-4617] Knuth yr:1998 vol:22 iss:4 pg:561 -568

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Title: Linear probing and graphs

Author(s): Knuth DE

Source: ALGORITHMICA 22 (4): 561-568 D 1998

Document Type: Article

Language: English

Cited References: 12 **Times Cited:** 11 ⓘ



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Publisher: SPRINGER VERLAG, 175 FIFTH AVE, NEW YORK, NY 10010 USA

Subject Category: COMPUTER SCIENCE, SOFTWARE ENGINEERING; MATHEMATICS, APPLIED

IDS Number: 139NE

ISSN: 0178-4617

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KNUTH DE ALGORITHMICA
 22 (4): 561-568 DEC 1998

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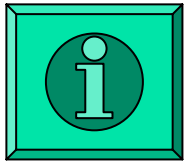
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<p><input type="checkbox"/> 1. Lushnikov AA Exact kinetics of the sol-gel transition PHYSICAL REVIEW E 71 (4): Art. No. 046129 Part 2 APR 2005 Times Cited: 0 <input type="button" value="S.F.X"/> <input type="button" value="VIEW FULL TEXT"/></p> <p><input type="checkbox"/> 2. Lushnikov AA From sol to gel exactly PHYSICAL REVIEW LETTERS 93 (19): Art. No. 198302 NOV 5 2004 Times Cited: 4 <input type="button" value="S.F.X"/> <input type="button" value="VIEW FULL TEXT"/></p> <p><input type="checkbox"/> 3. Flajolet P, Salvy B, Schaeffer G Airy phenomena and analytic combinatorics of connected graphs ELECTRONIC JOURNAL OF COMBINATORICS 11 (1): MAY 27 2004 Times Cited: 0 <input type="button" value="S.F.X"/></p> <p><input type="checkbox"/> 4. Kung JPS, Yan C Exact formulas for moments of sums of classical parking functions ADVANCES IN APPLIED MATHEMATICS 31 (1): 215-241 JUL 2003 Times Cited: 0 <input type="button" value="S.F.X"/> <input type="button" value="VIEW FULL TEXT"/></p> <p><input type="checkbox"/> 5. Kung JPS, Yan C</p>	<p>Mark: [0 records marked]</p> <p><input checked="" type="radio"/> Selected records <input type="radio"/> All records on this page <input type="radio"/> Records <input type="text" value=""/> to <input type="text" value=""/></p> <p><input type="button" value="SUBMIT MARKS"/></p> <p>You can print, save, export, e-mail, and order records after adding them to the Marked List. (The list can hold 500 records.)</p> <p>Analyze Results:</p> <p><input type="button" value="ANALYZE"/></p> <p>View rankings and histograms of the authors, journals, etc. for this set of records. (Up to 2,000 records at a time.)</p>
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Fulltext archives

- ACM Digital Library
- IEEE Xplore
- Lecture notes in computer science
- Master thesis, doctoral thesis
- Electronic journals (UiO subscribes to over 7000)



ACM Digital Library

- 87 journals (1954-)
- 192 conferences (1952-)
- Search technique
 - implicit OR
 - ranked hit lists
 - Phrases "..."
 - Case sensitive
 - Operators (+, -)
 - Truncation (*)

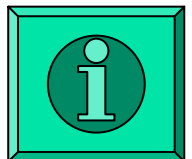
Via <http://x-port.uio.no>



IEEE Xplore

- Close to 1 million documents (articles, conference papers, IEEE standards) from 1988 - (selected items back to 1950)
- Search technique
 - Fields (au, ti, ab, de, ...)
 - automatic truncation (avoid using ")
 - limit on document type
 - wild card: ? (one char), * (nil or more chars)
 - Operators (paragraph, sentence, phrase, near, and, or, not)

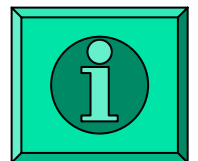
Via <http://x-port.uio.no>







Lecture Notes in Computer Science

- A book series (more than 3400 volumes)
 - Lecture Notes in Artificial Intelligence
 - Lecture Notes in Bioinformatics
- Paper version in the library (vol. 1-3350)
- Search technique
 - Operators (and or not near)
 - Truncation (*)
 - Phrases "..."
 - word forms (sink** = sink* sank sunk)



Via <http://x-port.uio.no>

Thesis

- Thesis in informatics 
- Thesis and doctoral thesis for UiO as a whole (DUO) 

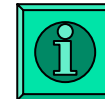
Via <http://www.ub.uio.no/umn/inf/>



Electronic journals

- The university library subscribes to over 7000 electronic journals
- You find them via the library portal

<http://x-port.uio.no>





Data bases in other disciplines

- Psychology (PsycInfo)
- Medicine (PubMed)
- Sociology (Sociology abstracts)
- Education science (ERIC)





Library catalogues

- Union catalogue of the universities and colleges in Norway (BIBSYS)
 - <http://www.ub.uio.no/umn/inf/>
- Catalogues of the National Library
 - <http://www.nb.no/baser/>
- Public libraries



Two scenarios

We want literature about:

1. Cultural considerations/implications of doing systems development in developing countries.
2. Psychological implications of e-learning.




Case 1: cultural implications of doing systems development in developing countries

- The vocabulary
 - global programming teams, systems development, developing countries, globalization, outsourcing, ...
- The sources:
 - ACM digital library
 - INSPEC
 - Web of knowledge
 - Sociological abstracts



Case 2: Psychological implications of e-learning

- The vocabulary
 - e-learning, psycholog^{*}, computer uses in education, distance education, computer aided instruction (CAI), human computer interaction, user interfaces, ...
- The sources:
 - Inspec
 - ERIC
 - PsycInfo
 - Web of knowledge
 - Collection of computer science bibliographies
 - HCI bibliography



You want some, or all, articles on a specific topic:

- Most important informatics source: INSPEC
 - Decide what's the correct terminology
 - Combine and limit your search to get a clear, readable hit list
 - Read the abstracts to check relevance
 - To get the text:
 - Electronic version? IEEE Xplore, ACM Portal, Lecture Notes in Computer Science, or in an electronic journal?
 - Paper version? Check holdings in x-port, order a copy.



Cross-disciplinary topic?

- Check other databases! E.g:
 - Bioinformatics (Biological abstracts)
 - Mathematical modelling (MathSci)
 - User interface (PsycINFO)
 - Medical informatics (PubMed)
 - Education (ERIC)
 - Sociology (Sociological abstracts)
 - ...
- Same search techniques, different terminology, different user interface, different search syntax,....



Summing up

- Evaluate and be critical to the information you find on the Internet
- Define your problem; information need
- Use the search techniques to hit the bull's eye
- Be aware of the different sources available and use them
 - Handbooks
 - Reference databases
 - Fulltext archives and electronic journals
- The library staff is always there to help you