CS 697: Library Resources and your Research

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Fall 2019



Group exercises

- 15 min to work through questions
 - Tip for starting! Google: waterloo library computer science
- Share your findings with the class



Using Library Resources

To help you find and access information/books/papers



DC Library

- Study space
- Bookable group and quiet rooms
- Research help
- WCC, SSO, IST, CCA
- Computers, scanners, printers
- Print CS books, journals, conference proceedings
- Library Hours
 - 8am-midnight
 - Extended to 24hrs during exams
- CS Librarian
 - DC 1547
 - <u>r3hutchi@uwaterloo.ca</u>





Start with the Computer Science Research Guide

subjectguides.uwaterloo.ca/compsci



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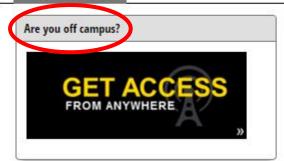
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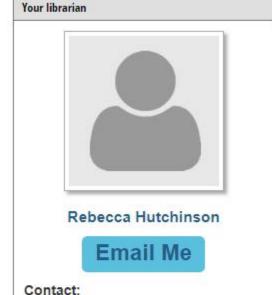
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Course reserves are reccomended or required readings from your instructors. They can include lecture notes, assignment solutions, print books, e-books, online journal articles, or excerpts from other published sources.

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Useful research guides by subject



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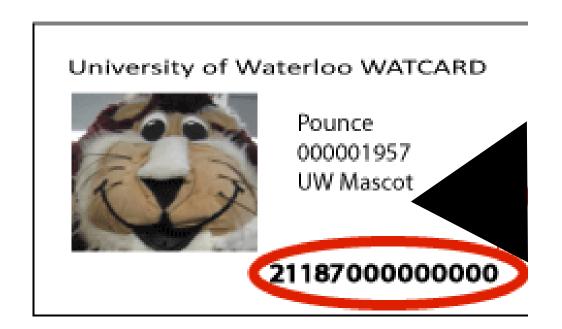
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WatCard = **Library Card**

- Sign out books and journals
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Services for graduate students



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A.K.A. How not to publish in an undesirable journal

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igh these factors in order to make your decision.

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How to Assess a Journal from the Canadian Association of Research Libraries

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Learn about research data management plans and data repositories.

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· Evaluating information sources by Tom Harding Last Updated Aug 31, 2018 2297 views this year



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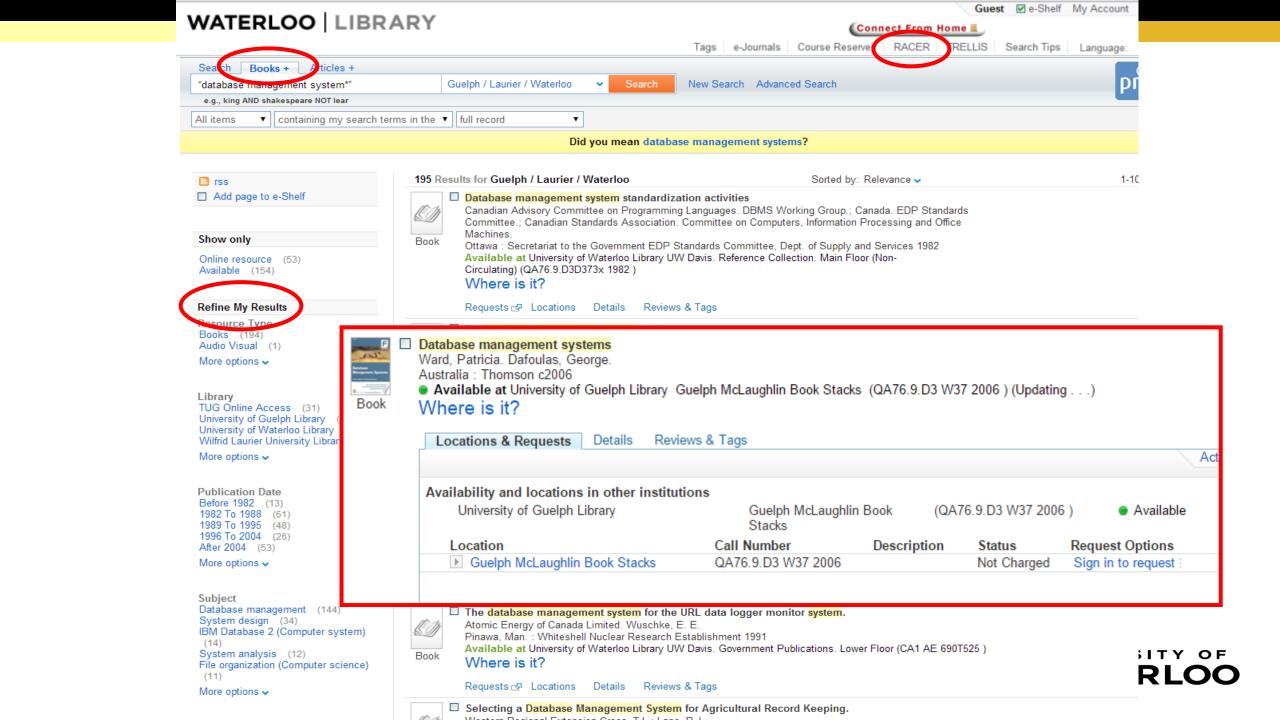
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Electronics Industry – Computing	HD 9696-969
Information Technology	T 58.4-58.9
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Knowledge representation	Q 300-390
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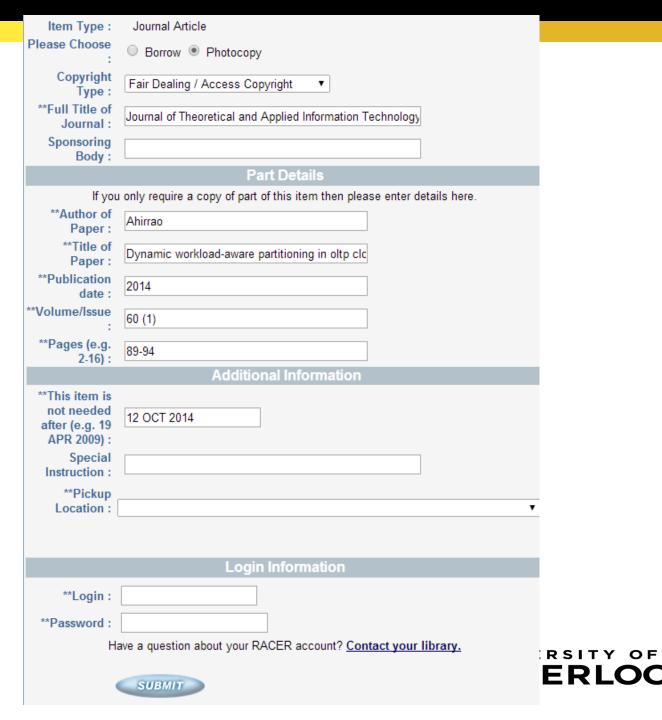
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Tags: computer science, cs, math, mathematics



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- Professional Computing and Web Design From Springer, 2004-current
- <u>Synthesis Digital Library</u>
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- Encyclopedia of Computer Science, 4th Edition

Full-text online book from ACM.

- Free On-line Dictionary of Computing
- · World Wide Web Acronym Server

A searchable index to over 12000 acronyms; from Ireland. Can be helpful when deciphering conference proceedings.

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Cybernetics	Q 300-390			
Electronics Industry – Computing	HD 9696-9697			
Information Technology	T 58.4-58.9			
Information theory	Q 300-390			
Knowledge representation	Q 300-390			
Digital Computers	QA 76.5			
Microcomputer workstations	QA 76.525			
Mobile computing	QA 76.59			
Multimedia systems	QA 76.575			
Online data processing	QA 76.5557			
Parallel processing	QA 76.58			
Real-time data processing	QA 76.54			

Drogramming



04.76.6

Search multiple research databases to find papers on a topic



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Citation searching

The journal indexes below provide the references for each article. Learn who has cited a particular paper or author.

- · Web of Science- multidisciplinary
 - · Journal Citation Reports journal impact factors for academic journals
- Scopus science, health and social sciences

Multidisciplinary research databases

Not sure where to start? The databases below cover many disciplines including math, life sciences, business, technology, economics, health, medicine, and physical sciences.

- Scopus
- subjects such as technology, social sciences, science and engineering.
- Web of Science Includes subjects such as technology, social sciences, science and engineering.
- · ProQuest databases Search multiple databases at once.
- EBSCOHost databases Search multiple databases at once.
- · Google Scholar

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Research databases for computer science

Find journal articles using these research databases:

- ACM Digital Library
- carry all ACM journals, magazines, and proceedings back to the beginning of the ACM 50 years ago.
- DBLP Computer Science Bibliography From the University of Trier, the "DBLP indexes more than 2.6 million articles and contains many links to home pages of computer scientists."
- IEEE/IEE Electronic Library (IEL) Large technology database; includes journals, magazines, conference proceedings and more.
- · arXiv Computer Science arXiv is an e-print service in the fields of physics, mathematics, computer science, quantitative biology, quantitative finance and statistics. It is arXiv is owned and operated by Cornell University, and the University of Waterloo is a member institution
- ACM Computing Reviews The ACM Computing Reviews contains expert reviews from over 1,000 subjects more...
- Eurographics Digital Library From the European Association for Computer Graphics
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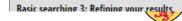
Basic searching 1: Brainstorming your research topic



Basic Searching 2: Searching in a database







Searching for: ("customer specified" OR "customer determined" OR "user specified" OR "user determined") AND (performance OR overload) AND (workload* OR "admission control" OR "query scheduling" OR "execution control") AND ("database management system* OR DBMS) (start a new search)

Found 3 within Publications from ACM and Affiliated Organizations (Full-Text collection)

Expand your search to The ACM Guide to Computing Literature (Bibliographic citations from major publishers in computing: 2,268,251 records)

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("customer specified" OI

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Interaction-aware scheduling of report-generation workloads

Mumtaz Ahmad, Ashraf Aboulnaga, Shivnath Babu, Kamesh Munagala

August 2011 The VLDB Journal — The International Journal on Very Large Data Bases, Volume 20 Issue 4

Publisher: Springer-Verlag New York, Inc. Full text available: PDF (1.51 MB)

Bibliometrics: Downloads (o weeks): 5, Downloads (12 Months): 30, Downloads (Overall): 141, Citation Count: 5

The typical workload in a database system consists of a mix of multiple queries of different types that run concurrently. Interactions among the different queries in a query mix can have a significant impact on database performance. Hence, optimizing ...

Keywords: Business intelligence, Experiment-driven performance modeling, Query interactions, Report generation, Scheduling, Workload management

- Adaptive quality of service management for enterprise services
 - Daniel Gmach, Stefan Krompass, Andreas Scholz, Martin Wimmer, Alfons Kemper

February 2008 Transactions on the Web (TWEB), Volume 2 Issue 1

Publisher: ACM & Request Permissions Full text available: PDF (2.31 MB)

Bibliometric Downloads (6 Weeks): 13, Downloads (12 Months): 126, Downloads (Overall): 1770, Citation Count: 18

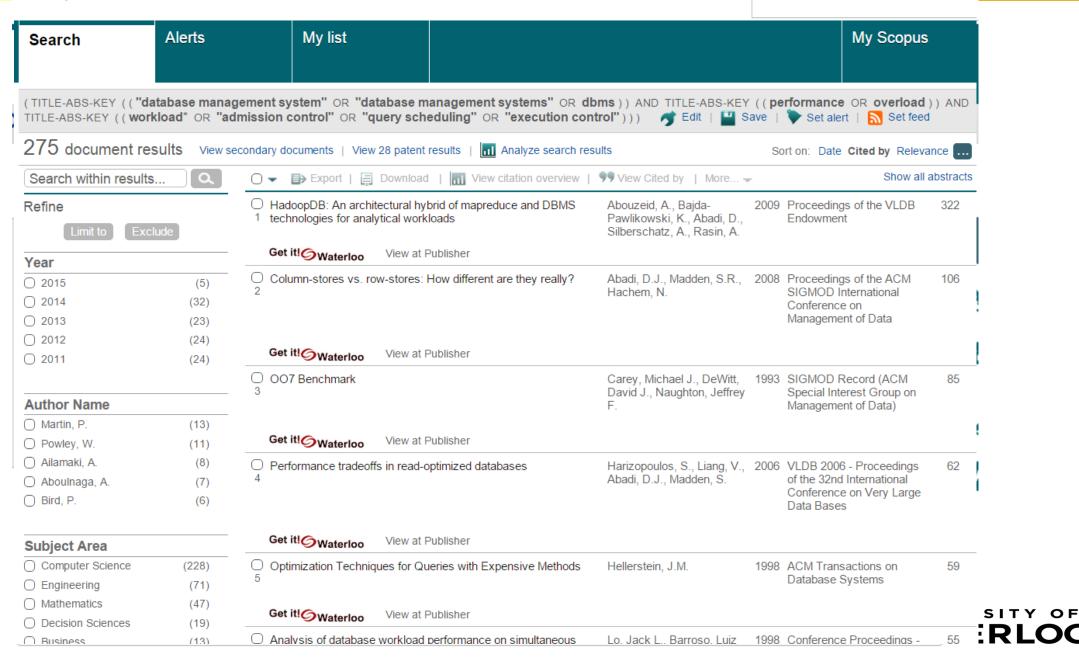
In the past, enterprise resource planning systems were designed as monolithic software systems running on centralized mainframes. Today, these systems are (re-)designed as a repository of enterprise services that are distributed throughout the available ...

SITY OF

Keywords: Quality of service, fuzzy controller, workload characterization

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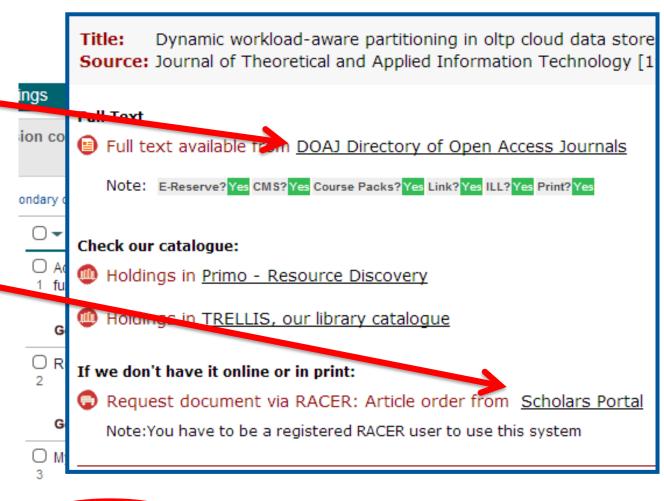
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· Calculate Your Academic Footprint by Shannon Gordon Last Updated Jul 11, 2017 91506 views this year

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High impact papers

Some databases allow you to sort results by times cited – not necessarily an indication of quality – definitely an indication of interest



High impact conferences and journals

What conferences and journals in your field should you pay attention to/try to publish in?



High Impact Conferences

- Conference Acceptance Rate
 - Produced by the Association for Computing Machinery, available through ACM Digital Library
 - Compares total number of submissions and number of submissions accepted
 - An acceptance rate of less than 20% is usually considered a top conference
- H-index for journals and conferences
 - Produced by Google, available through Google Scholar
 - "The h-index of a publication is the largest number h such that at least h articles in that publication were cited at least h times each" WATERLE

To the TE International Commercial of National Agents and Hartagent Systems

Valencia, Spain — June 04 - 08, 2012

International Foundation for Autonomous Agents and Multiagent Systems Richland, SC @2012

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Abstract Source Materials Authors References Cited By Index Terms Publication Reviews Comments Table of Contents

Title AAMAS 12 International Conference on Autonomous Agents and Multiagent Systems

Valencia, Spain - June 04 - 08, 2012

Pages 592

In-Cooperation SIGAI ACM Special Interest Group on Artificial Intelligence

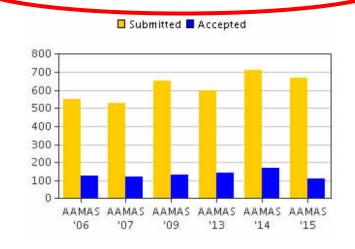
Publisher <u>International Foundation for Autonomous Agents and Multiagent Systems</u> Richland, SC

ISBN 0-9817381-1-7 978-0-9817381-1-6

Conference AAMAS International Conference on Autonomous Agents and Multiagent Systems



Overall Acceptance Rate 930 of 4,364 submissions, 21%



Year	Submitted	Accepted	Rate
AAMAS '06	553	127	23%
AAMAS '07	531	122	23%
AAMAS '09	651	132	20%
AAMAS '09	651	132	20%
AAMAS '13	599	140	23%
AAMAS '14	709	169	24%
AAMAS '15	670	108	16%
Overall	4,364	930	21%



High Impact Journals

- Journal Citation Reports (JCR)
 - Produced by Thompson Reuters, available through Web of Science
 - Provide a journal's impact factor
 - "calculated by dividing the number of citations in the JCR year by the total number of articles published in the two previous years. An Impact Factor of 2.5 means that, on average, the articles published one or two year ago have been cited two and a half times"
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- Web of Science Includes subjects such as technology, social sciences, science and engineering
- · ProQuest databases Search multiple databases at once.
- EBSCOHost databases Search multiple databases at once.
- · Google Scholar

Link Google Scholar to the Library for easy access to full text! Settings > Library Links > University of Waterloo

Research databases for computer science

Find journal articles using these research databases:

- ACM Digital Library
- Full-text of nearly all ACM journals, magazines, and proceedings back to the beginning of the ACM 50 years ago.
- DBLP Computer Science Bibliography From the University of Trier, the "DBLP indexes more than 2.6 million articles and contains many links to home pages of computer scientists."
- IEEE/IEE Electronic Library (IEL) Large technology database; includes journals, magazines, conference proceedings and more.
- · arXiv Computer Science arXiv is an e-print service in the fields of physics, mathematics, computer science, quantitative biology, quantitative finance and statistics. It is arXiv is owned and operated by Cornell University, and the University of Waterloo is a member
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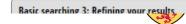
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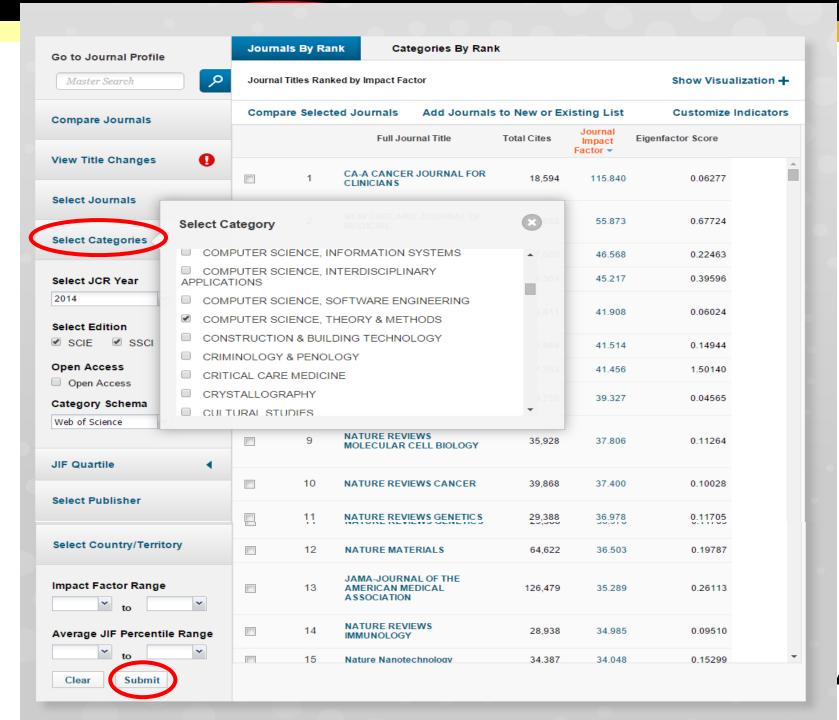


Basic Searching 2: Searching in a database











You, the author

Keep track of your own impact by using the H-index and ORCID



H-Index

- Author has published at least h papers that have each been cited at least h times
- Example
 - Published 7 papers
 - Times cited for each paper:
 - **4**, 25, 3, 14, 22, 15, 9
- Question
 - What is this author's h-index?

Paper	Times cited
1	25
2	22
3	15
4	14
5	9
6	4
7	3



H-Index

 Author has published at least h papers that have each been cited at least h times

- Answer: H-index = 5
 - Have they published at least 7 papers which have each been cited at least 7 times? No
 - Have they published at least 6 papers which have each been cited at least 6 times? No
 - Have they published at least 5 papers which have each been cited at least 5 times? Yes

Paper	Times cited
1	25
2	22
3	15
4	14
5	9
6	4
7	3





Join the 35,000 Canadian researchers who use ORCID

ORCID = OPEN RESEARCHER AND CONTRIBUTOR ID

What is ORCID?
Similar to a DOI, an ORCID is a
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- Your ORCID also includes a profile where you can link pre-existing works to your ORCID using databases like Scopus, PubMed and many others to automatically update your profile.

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• Many publishers now require an ORCID to submit manuscripts. Some of these publishers include: IEEE, Science Journals, Wiley, Springer Nature and SAGE Publications.



Questions about the Library?



The Search Process

Why do we need to create a comprehensive search? How do we create a comprehensive search?



Literature Review

- Critical aspect of the thesis/research paper
 - Sometimes referred to as 'background' or 'relevant work'
- Answers the question: where does your work fall within the research that has already been done in your field?
- Discuss the theories, ideas, and/or work that influenced your perspective on this topic
- Clarifies scope, provides definitions
- Proves significance of your thesis work/research
 - Defines a gap in the literature you are about to fill
 - Explains how your work extends previous research
 - Explains how your work challenges previous research



The Search Process

- 1. Develop your topic
- 2. Determine the most important concepts of your topic
- 3. Generate a list of useful search terms
- 4. Use these terms to create a search strategy specific to a selected database
- 5. Review results and revise search
- 6. Select another resource and search again!



Develop Your Topic

- Narrow your research question/thesis statement
 - What is in/out of scope?
 - Create your search
- Consider searching around your topic
 - Create a broad, deeper search on one or two areas in your topic



Important Concepts

- Isolate the main concepts of your research topic
 - What is the best way to achieve customer-specified performance objectives for workloads in a database management system?
 - customer-specified AND performance objectives AND workloads
 AND database management system



Search Terms

- To achieve customer-specified performance objectives for workloads in a database management system
 - Database management systems = Database management system = DBMS



Search Terms

- To achieve customer-specified performance objectives for workloads in a database management system
 - controlling workloads, workload performance management, resource control in workload
 - Types of resource control = admission control, query scheduling, execution control



Search Strategy

Customer- Per Specified O

- Customer specified
- Customer determined
- User specified
- User determined

Performance Objectives

Concepts

- Performance
- Overload

Workloads

- Workload
- Admission control
- Query scheduling
- Execution control

Database Management System

- Database management system
- DBMS

Search Terms



Search Strategy

- AND combines concepts
- OR combines search terms
- () separates concepts and holds search terms together
- "Search phrases"
- Find the multiple endings of a word with an asterisk *
 - Canad* will find Canada, Canadian, Canadians



Search Strategy

("customer specified" OR "user specified") AND (performance OR overload) AND (workload* OR "admission control" OR "query scheduling" OR "execution control") AND ("database management system" OR "database management systems" OR DBMS)



Rebecca Hutchinson, Computer Science Librarian r3hutchi@uwaterloo.ca

