CS 697: Library Resources and your Research

Rebecca Hutchinson
Computer Science, Math, and Physics Librarian
November 2018
Your Research Process

- UW Libraries
  - Have you used any of our spaces or services?
  - Which ones?
    - What questions do you have/what would you like to know more about?

- Finding information
  - Where do you look?
  - How do you search?
  - What works well/what tips would you give other students?
  - What problems do you encounter/what is the hardest part when looking for information?
**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
- r3hutchi@uwaterloo.ca
Using Library Resources

To help you find and access information/books/papers
Start with the Computer Science Research Guide

subjectguides.uwaterloo.ca/compsci
If not on campus, log in to the library to access paid for content
WatCard = Library Card

- Sign out books and journals
- Get Access From Anywhere
  - Access the Library’s electronic resources from off campus
  - Last name and barcode
Services for graduate students
## Services

- Borrowing privileges
- Course reserves
- Equipment loans
- Library card
- Students at a distance
- Suggest a purchase
- UWSpace
- Book a Library study room

## Calculate your academic footprint

Learn about researcher IDs and how to calculate your h-index.

- [Calculate Your Academic Footprint](#)
  by Shannon Gordon  Last Updated Jul 11, 2017  91506 views this year

## Research data management

Learn about research data management plans and data repositories.

## Copyright

These guides provide an overview of copyright in Canada and Creative Commons licensing options.

- [Copyright and Licensing](#)
  by Lauren Byl  Last Updated May 15, 2018  1564 views this year
- [Creative Commons](#)
  by Rebecca Hutchinson  Last Updated Aug 14, 2018  162 views this year

## Evaluate Information

- [Evaluating information sources](#)
  by Tom Harding  Last Updated Aug 31, 2018  2297 views this year
Find books through the catalogue

You have access to all (including Guelph and Laurier) print material.
You have access to electronic material purchased by Waterloo.
Searches the library catalogues for UW, UG, and WLU Conference Proceedings, Journals. Google Scholar and Library Databases are best for articles. Print books, e-books, and more. Term loan (4 months). Want a book not in the catalogue? Click on the RACER link to request it.
Request books not found in the catalogue

Use the RACER program to request items through interlibrary loan
RACER Requests

- Interlibrary loan service – all Ontario universities
- Usually emailed to you within 3 days
- No cost to you
- Login = Watcard Barcode
- Password = last name lowercase
Electronic books can be found by searching ebook collections

Some of Waterloo’s ebooks are in the catalogue, others are in separate collections
Search multiple research databases to find papers on a topic
Computer Science: Find Papers

Get Started Find Papers Access Papers Find Books More Resources Conference Proceedings Grads Writing & Citing

Help & More

Research databases for computer science

Find journal articles using these research databases:

- ACM Digital Library
- Scopus
- Web of Science
- Journal Citation Reports
- Scopus - science, health and social sciences
- Scopus - multidisciplinary
- EBSCOHost databases
- Google Scholar
- ProQuest databases
- ACM Computing Reviews
- Eurographics Digital Library
- CiteSeerX

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
- Web of Science
- EBSCOHost databases
- ProQuest databases
- Google Scholar

Link Google Scholar to the Library for easy access to full text!
Settings > Library Links > University of Waterloo
Interaction-aware scheduling of report-generation workloads

Munirah Ahmad, Ashraf Abugilala, 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 (6 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)

Bibliometrics: 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...

Keywords: Quality of service, fuzzy controller, workload characterization
Found an article? Look for Get it at Waterloo to access full text
Get it!@Waterloo

- Links to full text if available online
- Order from Scholars Portal (RACER form) if not available online
Make sure Get it at Waterloo shows up on your Google Scholar searches when you are off campus.
Library links

Show library access links for (choose up to five libraries):

| | | 
|---|---|---|
| e.g., Harvard |  |  

- University of Waterloo Library - Get It!@Waterloo
- Canadian National Catalogue - Find in AMICUS

Online access to library subscriptions is usually restricted to patrons of that library. You may need to login with your library password, use a campus computer, or configure your browser to use a library proxy. Please visit your library’s website or ask a local librarian for assistance.

To retain settings, you must turn on cookies

About Google Scholar    Privacy    Terms    Provide feedback
Choose quality information

Do you limit your results to ‘peer reviewed’? If not, how do you determine if something is credible?
Evaluate Information

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

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

- **SCImago Journal Rank (SJR)**
  - Produced by Elsevier, available through Scopus
  - “weighted by the prestige of the journal... ‘Shares’ a journal’s prestige equally over the total number of citations in that journal”
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
  - Includes 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

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/IEEE 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
- Eurographics Digital Library
  - From the European Association for Computer Graphics
- CiteseerX
  - Contains documents on computer science and

High impact conferences

What conferences in your field should you attend/submit to?
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”
Overall Acceptance Rate 930 of 4,364 submissions, 21%
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

<table>
<thead>
<tr>
<th>Paper</th>
<th>Times cited</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>25</td>
</tr>
<tr>
<td>2</td>
<td>22</td>
</tr>
<tr>
<td>3</td>
<td>15</td>
</tr>
<tr>
<td>4</td>
<td>14</td>
</tr>
<tr>
<td>5</td>
<td>9</td>
</tr>
<tr>
<td>6</td>
<td>4</td>
</tr>
<tr>
<td>7</td>
<td>3</td>
</tr>
</tbody>
</table>
**H-Index**

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

- 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

<table>
<thead>
<tr>
<th>Paper</th>
<th>Times cited</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>25</td>
</tr>
<tr>
<td>2</td>
<td>22</td>
</tr>
<tr>
<td>3</td>
<td>15</td>
</tr>
<tr>
<td>4</td>
<td>14</td>
</tr>
<tr>
<td>5</td>
<td>9</td>
</tr>
<tr>
<td>6</td>
<td>4</td>
</tr>
<tr>
<td>7</td>
<td>3</td>
</tr>
</tbody>
</table>
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 16-digit number which identifies your research as belonging to you, regardless of how you sign your name on a publication (ex. Bob Smith or B. Smith).

Key Benefits

Visible: Your research will be more visible in key databases if it’s linked to ORCID.

Integrated: ORCID links with Scopus, Web of Science and other databases to automatically update your ORCID profile.

Global: ORCID is used by international researchers, funders and journals to support submissions and analytics.
How does ORCID work:

- Researchers sign up for ORCID and then use the 16-digit number in publication manuscripts and grant applications to identify them and their research.
- 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.

Take Home Message: ORCID will help you in your academic career

- Many publishers now require an ORCID to submit manuscripts. Some of these publishers include: IEEE, Science Journals, Wiley, Springer Nature and SAGE Publications.
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-specified**
- Customer specified
- Customer determined
- User specified
- User determined

**Performance Objectives**
- 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)