

Lecture 3

Finding Literature

UNIVERSITY OF AUCKLAND

COMPSCI 289

Prof. Robert Amor

Learning Objectives

- To identify quality literature
- To understand quality indicators for literature
- To know what types of literature exist
- To be able to find and manage literature

How do you find information?

- What do you do currently?
 - Why is this good?
 - Why is this bad?

- Motivation
 - Standing on the shoulders of giants
 - Understanding where the forefront of research is
 - Research something new
 - Don't reinvent the wheel
 - Learn about dead-ends

Quality Obsession

“No one knows how many scientific journals there are, but several estimates point to around 30,000, with close to two million articles published each year.”
(Altbach and de Wit 2018)

- So how do we know what is worth reading?
 - Quality Publication Aggregators
 - Peer Review
 - Citations
 - Knowledge of Journal or Publisher
 - Knowledge of Institution
 - Knowledge of Author

Peer Review Variables

Transparency



Closed peer review

- Single blind
- Double blind
- Triple blind



Open peer review

- Names of reviewers/editors may be visible to authors
- Reviewers' reports may be published
- Editorial decision/comments may be public

Timing and Location



Pre-publication

- Review submitted on preprint server prior to author submission to journal
- Review submitted through journal peer review system after author submission to journal
- Reviews accompany manuscript when transferred to a different journal within publisher/society/subject network



Post-publication

- Alongside published article as formal part of editorial process
- Informal: blogs, social media, etc.

Reviewer Selection



Authors can suggest

Preferred or non-preferred reviewers



Editors invite reviewers



Reviewers "bid" for papers

Review Process



Independent review



Interactive review

Reviewers dialogue with authors



Collaborative review

Reviewers can discuss feedback with each other to reach more informed assessment of article

Assessment of...



Science only



Science +

- Novelty
- Impact



WILEY

321907

Helpful Resources

- Quality Publication Aggregators – and others
 - Scopus, Science Direct (Elsevier)
 - Springer Link
 - IEEExplore
 - ACM Digital Library
 - Web of Science

 - Google Scholar

 - Author homepages
 - Research groups
 - Relevant conferences/journals

Library Resources

- Physical books and journal stacks
- Online databases
 - 100's available at UoA library
- Librarian

Internet Resources

- Google Scholar

- Wide coverage over conferences and journals
- Access to PDF for many articles
- Link to publisher's publication URL (DOI)
- Citation information
- Known author profiles

But

- Quality not guaranteed
- Self-citations

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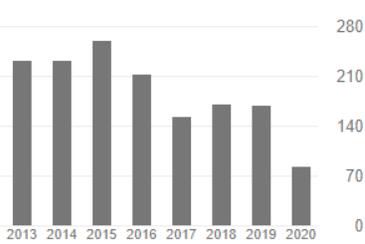
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TITLE	CITED BY	YEAR
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A generic approach to supporting diagram differencing and merging for collaborative design A Mehra, J Grundy, J Hosking Proceedings of the 20th IEEE/ACM international Conference on Automated ...	156	2005
Realistic load testing of web applications D Draheim, J Grundy, J Hosking, C Lutteroth, G Weber Conference on Software Maintenance and Reengineering (CSMR'06), 11 pp.-70	110	2006
Realistic Load Testing of Web Applications C Lutteroth, G Weber, D Draheim, J Hosking, J Grundy Conference on Software Maintenance and Reengineering (CSMR'06), 57-70	440 *	2006
An e-whiteboard application to support early design-stage sketching of UML diagrams Q Chen, J Grundy, J Hosking IEEE Symposium on Human Centric Computing Languages and Environments, 2003 ...	107	2003
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Pounamu: A meta-tool for multi-view visual language environment construction N Zhu, J Grundy, J Hosking Visual Languages and Human Centric Computing, 2004 IEEE Symposium on, 254-256	89	2004
Serendipity: integrated environment support for process modelling, enactment and work coordination JC Grundy, JG Hosking Automated Software Engineering 5 (1), 27-60	89	1998
Information visualisation utilising 3D computer game engines case study: a source code comprehension tool B Kot, B Wuensche, J Grundy, J Hosking Proceedings of the 6th ACM SIGCHI New Zealand chapter's international ...	80	2005
Constructing component-based software engineering environments: issues and experiences	78	2000

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Types of Publication

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Search Terms

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SEARCH TIPS for text fields

Boolean searches

Use the boolean operators **AND**, **OR**, and **NOT** to narrow or broaden your search results.

By default, an AND relationship is assumed between Search Within terms unless you specify a different operator in the **Edit Query**: input.

Searching for phrases

Enclose your search terms within quotation marks (" ") to search for an exact match of that phrase.

If no quotation marks are used, the search results will be populated with publications that contain your search terms somewhere in the text.

For example, if you search for "machine learning" the search engine will limit the results to publications that contain this exact phrase.

Wildcards

Use an asterisk (*) to specify any number of unknown characters. For example, if you search for **comput***, the search engine will provide results that contain words such as compute, computation, computing, etc.

Use a question mark (?) to specify any single unknown character. For example, if you search for **compute?**, the search engine will provide results that contain words such as computer or computed **but not** computers because the question mark represents only one character.

NOTE: Wildcards cannot be used at the start of a

Scope of search

- To develop/refine your research question
- Define the limits of the review
 - Too broad: Human-Computer Interaction
 - Too narrow: How does Human-Computer Interaction impact productivity of construction professionals with tablets on site?
 - Just right: Human-Computer Interaction and “construction professionals”

Literature Review

- An account of what has been published on your topic of interest
- Purpose – to critically analyze a segment of a published body of knowledge through summary, classification, and comparison of prior studies
- Traditional
 - Identifies and summarises a body of work
 - Identifies gaps and research frontier
 - Coverage may not be complete
- SLR – Systematic Literature Review
 - Rigorous process to identify 'all' relevant literature
 - Identifies and summarises a body of work
 - Identifies gaps and research frontier

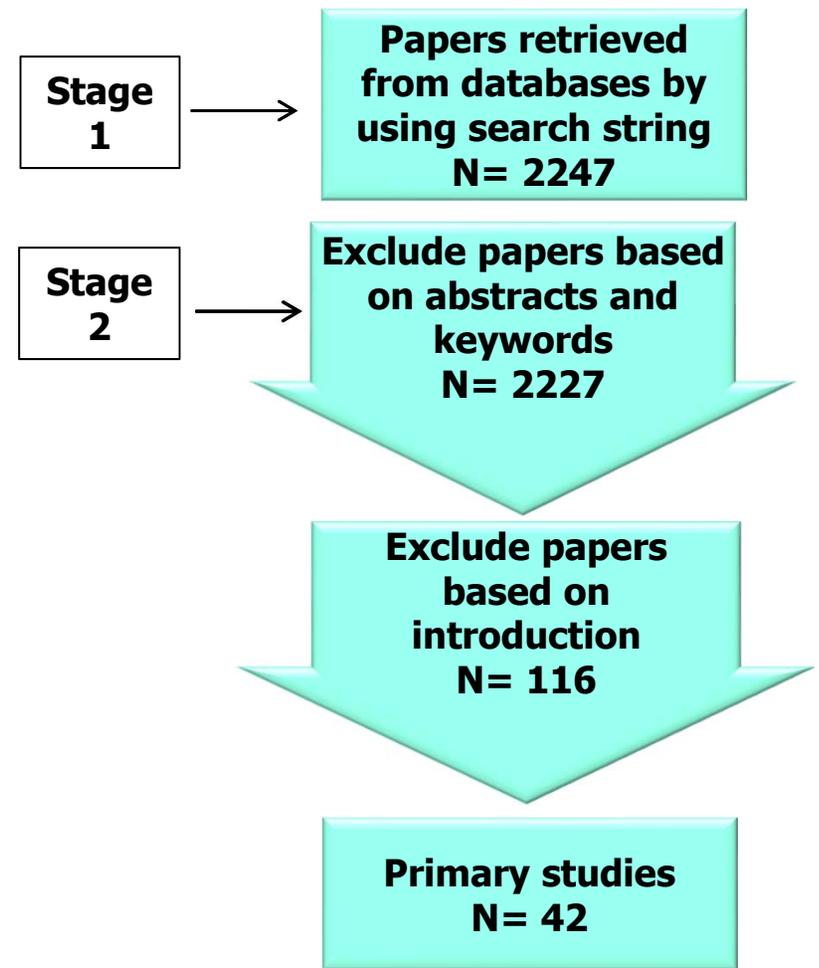
Systematic Literature Review/Process

- Search string:

("knowledge manag" OR "learning manag*" OR "reflective") AND ("agile" OR "scrum" OR "XP" OR "Lean") AND ("software" AND "team")*

- Databases:

- Springer
- Scopus
- IEEExplore



Ranking of Journals and Conferences

- ERA (Excellence in Research for Australia)
 - Community ranked thousands of journals and conferences
 - A*, A, B, C
- Web of Science
 - Impact Factor
 - Rank in Category

IEEE TRANSACTIONS ON PATTERN ANALYSIS AND MACHINE INTELLIGENCE

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COMPUTER SCIENCE, ARTIFICIAL INTELLIGENCE	1 of 136	Q1
ENGINEERING, ELECTRICAL & ELECTRONIC	2 of 266	Q1

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Engineering

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Paper Citations

- A proxy for quality?
 - Self citations not always disambiguated

Web of Science



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NEURAL NETWORK ENSEMBLES

By: HANSEN, LK (HANSEN, LK); SALAMON, P (SALAMON, P)
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IEEE TRANSACTIONS ON PATTERN ANALYSIS AND MACHINE INTELLIGENCE
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ture and interaction mechanism based on the construction problems such that if agents follow this, the overall system will solve the particular problem. The design of agent-based systems for construction problems have all the problems associated with designing traditional distributed, concurrent systems and have additional difficulties that arise from having flexible and sophisticated interactions between autonomous problem-solving components. The great power and flexibility of MAS allows developers to tailor the system to various construction problems as long as a properly designed architecture and collaboration mechanism could be built. Besides the collaboration mechanism, the integration of engineering domain knowledge is another important concern of the construction agent research community. For example, the development of domain knowledge based ontology, integration with existing legacy systems, and the implementation of conceptual models with available agent building toolkits are all difficult tasks in the development of MAS in construction.

Considering the complexity and dynamics of construction problems, there are many other important issues to be addressed for the effective application of agent-based systems. One particularly important aspect is the development of agent's learning and adaptive ability in construction applications. Change management is always a top concern for project managers, either during the project planning, collaborative design, resource management or execution processes. System developers are unable to foresee all potential situations an agent could encounter and specify agent behaviour optimally in advance. The agent's ability to learn from each other and the external environment provide a unique and powerful tool to tackle the changing environment. However, since the study of MAS in construction is relatively

References

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Researchers and Research Groups

- Typically researchers work on a topic for many years
- Look at their bibliography
 - Google Scholar
 - Personal websites
- Researchers often part of a larger research group
 - Search for the group website

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BEAST 2 is a cross-platform program for Bayesian phylogenetic analysis of molecular sequences. It estimates rooted, time-measured phylogenies using strict or relaxed molecular clock models. It can be used as a method of reconstructing phylogenies but is also a framework for testing evolutionary hypotheses without conditioning on a single tree topology. BEAST 2 uses Markov chain Monte Carlo (MCMC) to average over tree space, so that each tree is weighted proportional to its posterior probability. BEAST 2 includes a graphical user-interface for setting up standard analyses and a suit of programs for analysing the results.

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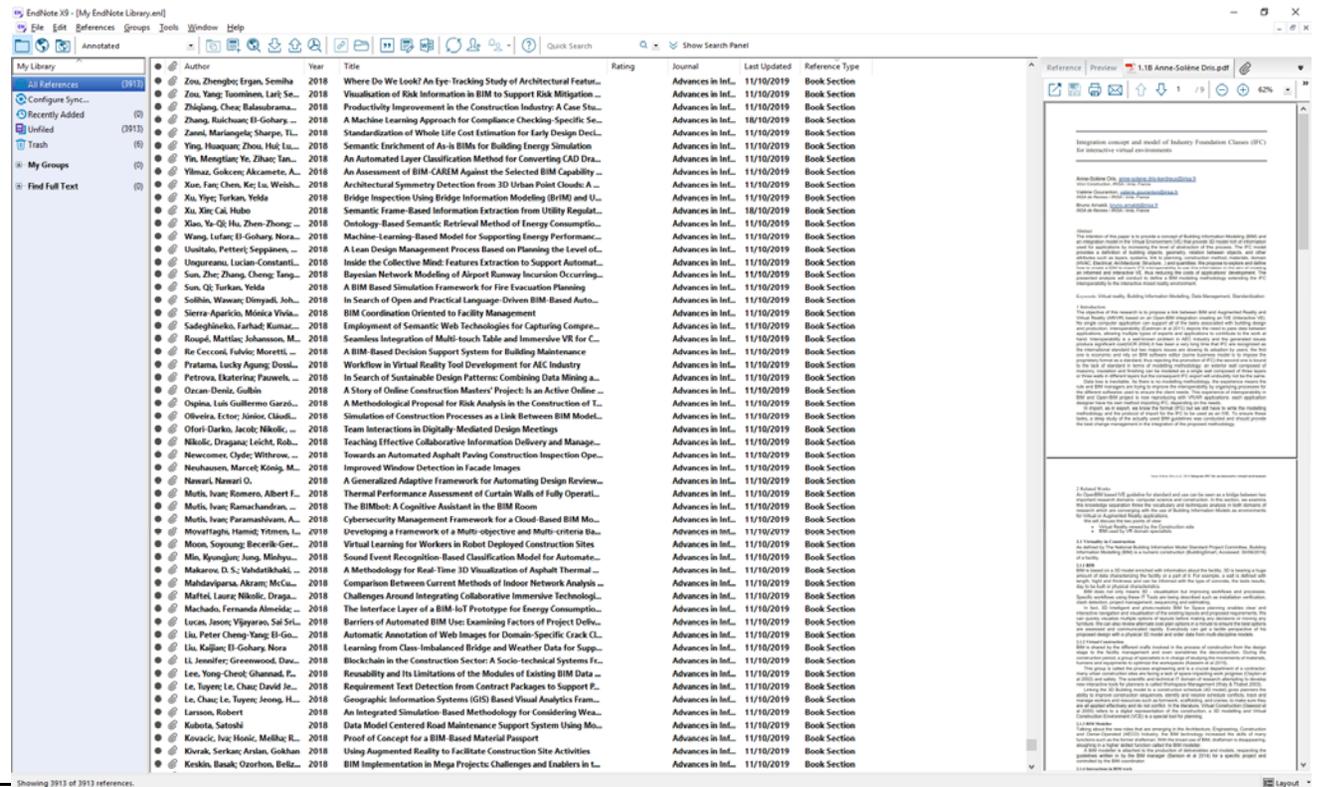
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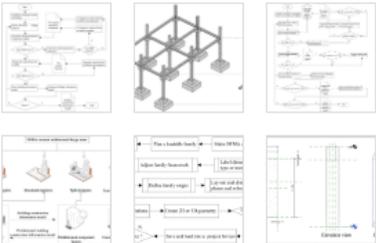
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Feedback

Summary

- An overwhelming amount of literature available
 - Need strategies to search for relevant information
 - Repositories versus Internet search
 - Keywords and constraining search criteria
 - Following references, researchers and groups
 - Need to be able to identify quality of information
 - Publication venue
 - Review process
 - Citations
 - Need to manage the references you find