

Literature Searching & Review Citing & Referencing

MSc Computer Science : Research Methods

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Overview

Literature Searching

- What to search for
- How to find it

Literature Searching: What to search for

Academic Writing

- Informed opinions
 - Based on knowledge of recent or important texts
- Using authoritative information sources
 - **Appropriate scholarly and technical texts**
 - written by recognized academics / professionals
- Support assertions with appropriate evidence
 - citing and referencing the literature

Literature Reviews

- Identification of the key points / topics / themes
 - Organisation by theme / topic
- Summary of the literature & a critical assessment of the topic
 - How the research already published fits together
 - Areas of consensus and disagreement
 - Areas of controversy/ where further research is required

Literature reviews

- Recommendations for further research
 - Address an identified gap / repeat the research
- Acknowledgement of your sources



Getting information off the
Internet is like taking a
drink from a fire hydrant.

Mitchell Kapor

Image source:
<https://www.flickr.com/photos/25031050@N06/3292307605>

What is Critical Thinking?

“Critical thinking is not about natural traits or personality; it is about a certain set of methods aimed at exploring evidence in a particular way.”

(Cottrell, 2011, p. 2)

Cottrell, S. (2011) Critical thinking skills: Developing effective analysis and argument. 2nd edn. Basingstoke: Palgrave Macmillan. –**ebook in the library**
https://discovery.hw.ac.uk/permalink/f/1nh9hb8/44hwa_alma2150337210003206

Critical Thinking

- Involves identifying positive AND negative aspects
- Do not be afraid of critiquing experts
- Try to engage with what you are reading - Don't just copy words down

Evaluating information

- Relevance
- Appearance
- Date
- Authority
- Rationale/ reason for writing

Peer Reviewed Articles and Conference Papers

Information and Software Technology 73 (2016) 101–121

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A systematic literature review on software measurement programs

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ABSTRACT

Context: Software measurement programs (MPs) are an important means for understanding, evaluating, managing, and improving software processes, products and resources. However, implementing successful MPs still remains a challenge.

Objectives: To make a comprehensive review of the studies on MPs for bringing into light the existing measurement planning models and tools used for implementing MPs, the accumulated knowledge on the success/failure factors of MPs and mitigation strategies to address their challenges.

Methods: A Systematic Literature Review (SLR) was conducted. In total, 65 primary studies were reviewed and analyzed.

Results: We identified 35 measurement planning models and 11 associated tools, most of which either proposed extensions or improvements for goal based approaches. The identified success factors include (a) organizational adoption of MP, (b) integration of MP with SDLC, (c) synchronization of MP with SPI

Finding specific items

- Subject Guide
 - <https://isguides.hw.ac.uk/cs>
- Discovery
 - <https://discovery.hw.ac.uk>
- A-Z Database List
 - <https://isguides.hw.ac.uk/az.php>

Literature searching How do I find it

Topic Searching

“Outline and discuss recent developments in **security** of the online environment”

ONLINE

VIRTUAL

OR

INTERNET

AND

SECURITY

ENCRYPT*

OR

CRYPTOGRAPH*

Developing your keywords

- Synonyms
 - security / encryption / cryptography
- Abbreviations
 - WWW / world wide web
 - VLE / virtual learning environment
- Alternate/International Spellings
 - Organisation OR organization
- Alternate ‘root’ endings/plurals
 - Cryptog* = cryptography / cryptographer / cryptographic

2: Identify resources

Find Resources page:

[https://www.hw.ac.uk/services/
is/find-resources.htm](https://www.hw.ac.uk/services/is/find-resources.htm)

Subject Guide:

<https://www.hw.ac.uk/services/subject.htm>

Discovery

<https://discovery.hw.ac.uk>



Quick note about Google Scholar...

- Pros:
 - Google look and feel but finds more scholarly material
 - Can be good for some things e.g. open access materials / grey literature
- Cons:
 - Doesn't provide criteria for what is considered 'scholarly'
 - Very limited search, filter and sort features

Don't solely rely on it

Step 3 – Apply Search techniques

- **AND** Narrows down the search by finding results which mention **ALL** your search terms
- **OR** Broadens a search by finding results which mention **ANY** of your search terms. (Useful if you have a few different terms covering the same concept)
- **NOT** Narrows the search by **EXCLUDING** records

Search techniques (Discovery)

- Truncation - math* = maths, mathematics, mathematical etc.
- Wildcards – organi?ation
- Phrase searching – “ ”
- Nested searching – (www OR “world wide web”) AND (Security OR Encrypt*)

NOTE – Other databases may use different symbols and searches. Use the help section.

Other tips

- Save your searches
- Set alerts
- Download LibKey Nomad extension

Other ways to search

Author Details

- Is this author an expert in the field, might they have other useful papers? Search for their papers or check their personal website

Journal Details

- Is this quite a specialised journal, might it publish papers on the same topic? Search within that journal with your selected keywords

Related articles

- Usually given in a publisher database – other articles in that database which share some of the same references as this article

Reference List (looking back)

- Author/s found these papers useful so might it be worth checking if relevant to you?

Cited reference searching (looking forward - Web of Knowledge)

- You have found a useful paper, how has this research developed/who has subsequently cited this paper in their research?

If we don't have the full text

- Books not in Discovery
 - [Ask us to buy books](#)
 - [Interlibrary loan](#) (10)
- Articles with no online access
 - [Interlibrary loan](#) (10)
- Local university/research libraries
 - E.g. [National Library of Scotland](#)

Other resources

- O'Reilly publishers
 - [free book samplers, ebooks, webcasts, tutorials and more](#)
- [Professional bodies/societies](#)
 - Regulations, standards, technical advice, news & briefings

Summary

You should be searching for:

- High quality, appropriate research and evidence
- From high quality sources
- Use critical thinking to distinguish

You can search effectively by:

- Using HWU supplied resources
- Applying search ‘tips and tricks’

Questions?

Citing & Referencing

MSc Computer Science

Overview

Citing and Referencing:

- **What**
- **Why**
- **When**
- **How**

Citing and referencing: what

Citation Styles

- Author/date (e.g. Harvard)
 - (Handelman and Levin, 2008)
 - Handelman, G. J. and Levin, N. W. (2008) 'Network intrusion detection, Information Management & Computer Security, 13(4), pp. 393-404.
- Numeric (e.g. SIAM, IEEE)
 - (1) [1] 1
 - Handelman G J, Levin NW. Network intrusion detection. Information Management & Computer Security 2008;13(4):393-404.

Citing (author-date)

Although numerous studies examined the work of the cyber security analyst with a specific interest in intrusion detection and the use of IDS, there are no tools to evaluate expertise in this field. To measure or determine expertise, previous studies mainly used interviews (Botta et al., 2007; D'Amico et al., 2005; Goodall et al., 2004, 2009). Other studies combined interviews with participatory observation (Werlinger, Hawkey, Muldner, Jaferian, & Beznosov, 2008) or a card sorting task (Paul & Whitley, 2013). These studies required meeting an analyst in person and relied on job titles as a verification of expertise level.

In this study, we wanted to distinguish between experts with profound understanding in cyber security and novices who currently have little to no expertise in cyber security. For that, we developed a short questionnaire that aims at differentiating between these two populations. Goodall et al. (2009) identified several types of expertise that are required by a security analyst to detect threats, and the ways in which expertise may be developed. The first is domain knowledge and the other is situated

Citations

- in body of text (in-text citation)
- abbreviated pointers to full reference

Referencing (author-date)

- Gonzalez, C., Vanyukov, P., & Martin, M. K. (2005). The use of microworlds to study dynamic decision making. *Computers in Human Behavior*, 21(2), 273–286. <http://dx.doi.org/10.1016/j.chb.2004.02.014>.
- Goodall, J. R., Lutters, W. G., & Komlodi, A. (2009). Developing expertise for network intrusion detection. *Information Technology & People*, 22(2), 92–108. <http://dx.doi.org/10.1108/09593840910962186>.
- Goodall, J. R., Lutters, W. G., & Komlodi, A. (2004). I know my network: Collaboration and expertise in intrusion detection. In J. Herbsleb & G. Olson (Eds.), *Proceedings of the 2004 ACM conference on computer supported cooperative work* (pp. 342–345). New York, NY: ACM. <http://dx.doi.org/10.1145/1031607.1031663>.
- Green, D. M., & Swets, J. A. (1966). *Signal detection theory and psychophysics*. New York: Wiley.
- Jajodia, S., Liu, P., Swarup, V., & Wang, C. (2010). *Cyber situational awareness: Issues and research*. New York, NY: Springer.

Reference

- end of text
- full bibliographic details

Allows reader to :

- see breadth & depth of reading
- locate sources
- verify if necessary

Citing (numeric)

3. Reference values for routine biochemistry tests

The question of reference values that relate to a specific population is of particular importance in relation to age. What do we consider as standard during aging? In older people, dementia, diabetes, depression and cardiovascular diseases are common. For example, the prevalence of dementia among those aged 75 years and over has been estimated to be 17.8% [5] and diabetes mellitus among those aged 65 or more to be about 10% [6]. Similarly, functional dependency could almost be considered normal for some groups of older people; for instance, a prevalence rate of up to 35% has been reported for some impairment of activities of daily living (ADL) [7]. Even the living conditions of elderly people are associated with abnormal biochemical results, due to the prevalence of disability in geriatric settings [8].

(CRP) and liver enzymes.

One of the most surprising result calcium values was significantly higation and the upper value of the co than the upper limit of normal, wh nosed hyperparathyroidism. Serum lowered by vitamin D deficiency. In vitamin D deficiency seems lower tl ably owing to better efficiency of s [10]; thus, fewer patients with hype regions would have a concomitant bl ciunm levels should be interpreted v status.

Huber et al. studied a sub-group of a cohort of 606 people aged 75 yea

Referencing (numeric)

References

- [1] Boulat O, Krieg MA, Janin B, Burckhardt P, Francioli P, Bachmann C. Clinical chemistry variables in normal elderly and healthy ambulatory populations: comparison with reference values. *Clin Chim Acta* 1998;272:127–35.
- [2] Carlsson L, Lind L, Larsson A. Reference values for 27 clinical chemistry tests in 70-year-old males and females. *Gerontology* 2009.
- [3] Tietz NW, Shuey DF, Wekstein DR. Laboratory values in fit aging individuals—sexagenarians through centenarians. *Clin Chem* 1992;38:1167–85.
- [4] Willcox DC, Willcox BJ, Wang NC, He Q, Rosenbaum M, Suzuki M. Life at the extreme limit: phenotypic characteristics of supercentenarians in Okinawa. *J Gerontol A Biol Sci Med Sci* 2008;63:1201–8.
- [5] Ramaroson H, Helmer C, Barberger-Gateau P, Letenneur L, Dartigues JF. Prévalence de la démence et de la maladie d'Alzheimer chez les personnes de 75 ans et plus: données réactualisées de la cohorte Paquid [Prevalence of dementia and Alzheimer's disease among subjects aged 75 years or over: updated results of the PAQUID cohort]. *Rev Neurol (Paris)* 2003;159:405–11.
- [6] Bourdel-Marchasson I, Helmer C, Barberger-Gateau P, et al. Characteristics of undiagnosed diabetes in community-dwelling French elderly: the 3C study. *Diabetes Res Clin Pract* 2007;76:257–64.
- [7] Millán-Calenti J, Tubío J, Pita-Fernández S, et al. Prevalence of functional disability in activities of daily living (ADL), instrumental activities of daily living (IADL) and associated factors, as predictors of morbidity and mortality. *Arch Gerontol Geriatr*; in press.

Citing and referencing: why

Why do you need to cite and reference?

Why do you need to Cite and Reference?

It's part of academic writing – academic research builds on existing knowledge.

It enables the reader to find more information.

School guidelines require it/markers expect to see it.



It shows that you've read, understood, and can use other researchers' observations.

It helps avoid plagiarism (passing off someone else's writing, ideas or research as your own).

Why?

- Your work must:
 - Be all your own work (you can have study groups but you can't work with others on summative assignments)
 - Have full citations and references that will enable a reader to find the sources.
 - Use proper quoting conventions to identify where you have used other people's writing.

What is plagiarism?

- Theft of intellectual property
 - Words/ideas
 - Images and diagrams
 - Published or unpublished
 - Intentional or Unintentional
 - From other people or yourself

Plagiarism

- 2013: German Education minister resigns after found guilty of plagiarising part of her PhD thesis (completed 1980).
- 2016: Melania Trump accused of plagiarising Michelle Obama's speech.
- Extends to images – e.g. Andy Warhol's use of photographs

Tips for avoiding plagiarism

- Develop good note-taking and time management strategies.
- Read academic articles for writing style tips.
- Follow your chosen citation style as precisely as possible.

Heriot-Watt University's [**Plagiarism Guide**](#) gives more information on how to avoid it.

Citing and referencing: When

When to cite

- Using someone else's work, words or ideas from:
 - published material, e.g., book.
 - unpublished material, e.g., dissertation/thesis.
 - material from a web page, etc.
- Quoting or paraphrasing.
- Statistics, Tables, graphs, diagrams, images (unless you created these yourself).
- Radio, TV programmes, etc.

When not to cite

- Common knowledge:
 - e.g. London is the capital of the United Kingdom.
 - Different subjects have different common knowledge.
 - If in doubt, ask your tutor for advice.
- Never reference something you haven't read if you can help it.

What is paraphrasing?

Paraphrasing is expressing borrowed ideas or information in your own words.

- Paraphrase when:
- a simplification of the original is appropriate for your purposes
- your own explanations need to be added
- the original ideas need to be reorganised to fit with your text
- your emphasis is different to that of the original text

Paraphrasing

- Focus on ideas not text.
 - You are demonstrating understanding
- Your writing is then your own words but the original idea is not your own.
- Needs a citation.

Original text: “Quotations should be relevant to your arguments and used judiciously in your text. Excessive use of quotations can disrupt the flow of your writing and prevent you from demonstrating your understanding and analysis of the sources you have read. Your tutor will prefer to read your own interpretation of the evidence.”

Pears, R. and Shields, G. (2016) Cite them right: The essential referencing guide. 10th edn. Basingstoke: Palgrave Macmillan.

Paraphrase: Pears & Shields (2016) state that in terms of both style and argumentation, it is preferable to present your own analysis, using direct quotations only sparingly.

Citing and referencing: How

**Do what your
lecturers tell you**

Cite them Right Online isguides.hw.ac.uk/az/ctro

The screenshot shows the homepage of the Cite them Right Online website. At the top left is the Macmillan logo and the "citethemright" brand name. A navigation bar includes links for Basics, Books, Journals, Digital & Internet, Media & Art, Research, Legal, Gov & EU, Comms, Tutorial (which is highlighted in blue), and Index. Below the navigation is a search bar with a magnifying glass icon. The main content area features a large image of a projector lens emitting light rays. On the left, there's a sidebar with sections for "Show me how to reference" (with a search bar), "Popular pages" (listing Printed books, Web pages, Journal articles, and Electronic books), and "Animated video guides" (listing Key elements in your references, Reference list vs bibliography, and What is common knowledge?). At the bottom right of the page is a "Find out more" button.

macmillan
citethemright

Search

HOME BASICS BOOKS JOURNALS DIGITAL & INTERNET MEDIA & ART RESEARCH LEGAL GOV & EU COMMS TUTORIAL INDEX

Home

Show me how to reference

Search by source type e.g. book, journal, web page

Popular pages

- Printed books
- Web pages
- Journal articles
- Electronic books

Animated video guides

- Key elements in your references
- Reference list vs bibliography
- What is common knowledge?

Introduction to Cite them right

How to quote: short

- Include a page number in the citation only.
- Put the quoted text in double quotation marks (“ ”).

Citation

“The action of diastase on starch has been the subject of numerous deliberations” (West, 2002, p. 68).

According to Royle “the British state was strong because it was militarily effective and efficient at collecting taxes” (2000, p. 167) .

How to quote: long

- Also include a page number.
- Indent quote and
- allow space above and below.

Citation

According to Solomon et al. (2006, p. 177):

The effectiveness of celebrities as communications sources often depends upon their perceived credibility. Consumers may not trust a celebrity's motives for endorsing a product or they may question the star's competence to evaluate the product's claims.

Therefore, it can be assumed ...

Editing a quote

- Removing words
 - use ellipsis
(3 dots - ...)
- Changing words
 - use square brackets
([])

Citation

According to Royle “the British state was strong because it was . . . efficient at raising taxes” (2000, p. 167) .

“The one concession to the whole online marketing phenomenon [is] the widespread use of Linked-in” (Martin 2012, p. 15).

Quoting tips

- Make it very clear where it is not your own words.
 - Use quotation marks/indents.
 - Give page numbers.
- Do not over use quotes
 - They do not show understanding.
 - Wastes word count.

Secondary Referencing

- Occurs when you have read something in an article but haven't read the original.
- For example, where, you have read Jones (2008), but you have not read Smith (2006).

Secondary referencing

Citation

According to Smith (2006), cited in Jones (2008, p. 17) ...

OR

Jones (2008, p. 17) citing Smith (2006) notes that ...

OR

Smith's landmark experiment ...
(2006 cited in Jones, 2008, p. 17)

Reference

Jones, M. (2008) *Offshore wind farms*. London: Cambridge University Press.

NOTE: you only reference the item you have read.

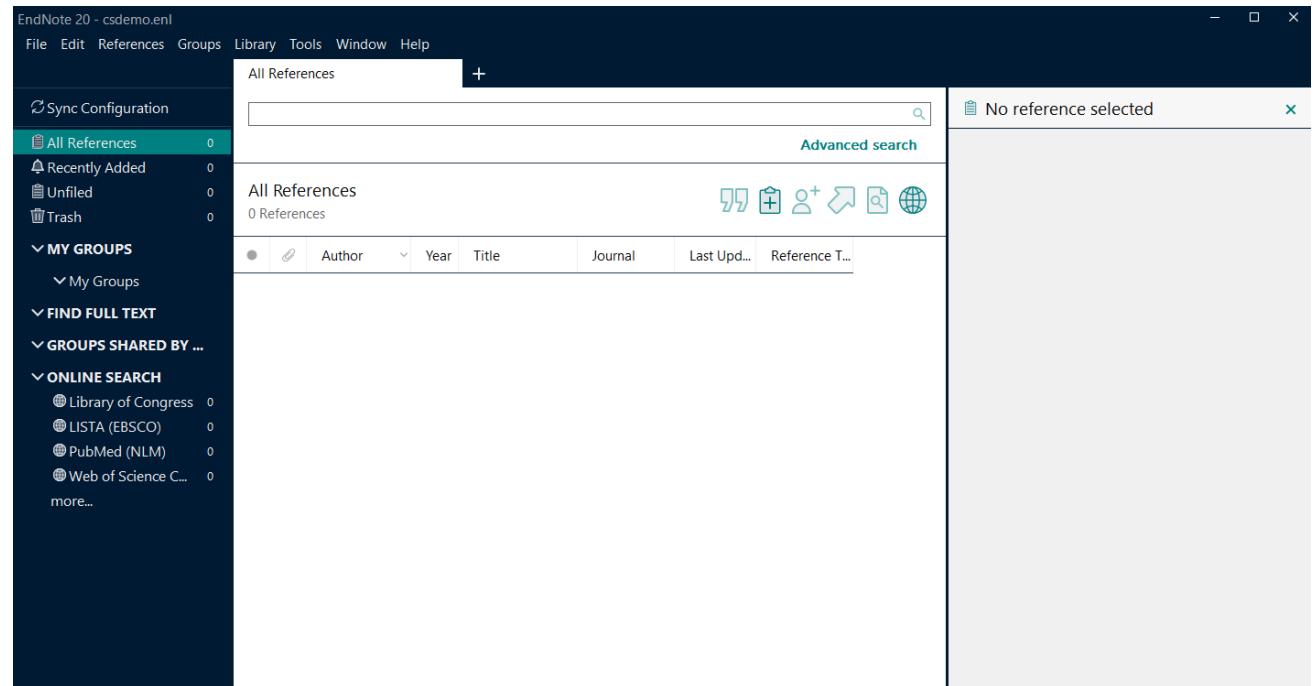
Summary

- Citing and Referencing is...
- It is important because...
- It should be used when...
- Citing and Referencing is done by...

Further help

Endnote desktop

Add and manage references,
insert citations in Word and
export library to BibTeX.



<https://isguides.hw.ac.uk/endnote>

LaTeX / BibTex

- Export records from a database search direct to BibTex
 - Some databases enable this (not Discovery)
- Export records to EndNote Desktop and use Endnote Desktop to export to BibTeX (Discovery and other databases)
 - File>Export>Output style Bib TeX export (save as .txt file)

Skills Hub

Guide and live classes

www.hw.ac.uk/skillshub

*Booking required
for all workshops*

Learning Adviser and Liaison Librarian (that's me)



Rachel Whittington

Email Me

Schedule Appointment

- [Schedule an appointment](#)
- Email: R.Whittington@hw.ac.uk
- Online guides:
<https://isguides.hw.ac.uk/cs>
www.hw.ac.uk/skillshub

Questions?