Becoming ‘well read’

• What does it mean if you are ‘well read’?
  – You have read broadly AND you understand the important works in depth.

• The importance of reading (“reading for a degree”).

• When it comes to research, you need to be well read in your topic area. Why?
  – To develop your own confidence in your research study
  • Do you know what is already known?
  • Do you know what are the open questions in the field?
  • Do you know who tried what and what were the results?
  • Do you know who are the main people working in the field?

• You also need to demonstrate that you are well read, by writing a literature review. Why?
  – To establish your credentials (otherwise the reader probably will not take your work seriously).
  – To put your work into the context of existing work.
  – To confirm that there is a gap and to show what is significant/new in your research.
  – For Honours: to demonstrate that you can do a literature review.
What is a good literature review?

• **Critical** description of **literature relevant** to a particular research topic that provides **justification** for the research:
  – Critical: not just a list of previous work, but critical summary. What does critical mean in academic-speak?
    • Careful analysis of merits and faults (not just finding faults).
  – Literature: proper academic sources, properly referenced.
  – Relevant: Related work should be described in terms of the relevance to your study.
  – Justification: it must be clear from the related literature why your study is needed. Gaps/shortcomings of the current state of the field should be clear.

• A literature review should not be just a summary of literature, but a structured flow of related work, well categorised and laying the foundation for your study.
Group exercise:

Examples of good and bad literature reviews
How to approach a literature review

• Start with your topic
  – What are the key concepts? Compile a list of the keywords.

• Find information sources:
  – Conduct searches on the keywords.
  – Start with a relevant paper and track backwards and forwards (see later).
  – Read latest issues of relevant journals / conference proceedings.

• Read, read, read... and read again.
  – And later re-read the good sources.

• As you read, group your sources by topic:
  – Adapt your key topics as new / more specific themes become apparent.
  – Take notes as you read.
  – Start to critically analyse.

• Grouping by topic, makes it easy to add references that you find later.
Have a system

• While you are reading, have some system for taking notes & being able to find papers again.

• Referencing:
  – Recommend LaTeX & BibTeX
  – Use systematic key numbering (e.g. ADA_13_02: 2\textsuperscript{nd} paper that you have by Adams in 2013)

• Taking notes:
  – Any notes must have the reference key.
  – Relevant points.
  – Where in your report the paper could be relevant.
  – Ideas for your research that you have while reading.

• Index cards?
Academic literature sources

• Journal articles
• Conference papers (in published proceedings)
• Books & chapters in books
  – Avoid too many general works (textbooks). Use the original references.
• Technical reports
• Theses and dissertations
Wikipedia and other web sources

• We all use Wikipedia, so what’s wrong with this?

Digital forensics is “a branch of forensic science encompassing the recovery and investigation of material found in digital devices, often in relation to computer crime.” [18]

References


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Digital forensics

From Wikipedia, the free encyclopedia

**Digital forensics** (sometimes known as digital forensic science) is a branch of forensic science encompassing the recovery and investigation of material found in digital devices, often in relation to computer crime.[1][2] The term digital forensics was originally used as a

References [edit]


**Use the original reference**

**If it’s a proper source (and you can get it).**
Tracking references

References to older foundational papers

Start with a key paper

Citations to more recent work

WARNING: this process could be infinite – be selective! Only include the most important and the most relevant work.

Identify new key papers and start again
References


Citations to key paper leading to newer references

Google Scholar search results for "Agile software development: a contemporary philosophical perspective"
Finding a particular paper

• Is it a journal paper?

Library website: www.library.up.ac.za
Journals:
E-Journals A-Z On Campus
E-Journals A-Z Off Campus
Finding a particular paper

• Is it a conference paper?

Recent advances in problem understanding: changes in the landscape a year on
K. McClymont - Proceedings of the 15th annual conference companion ..., 2013 - dl.acm.org
Abstract This paper provides an updated survey of new literature in, and related to, the field
A new approach for LSB based image steganography using secret key
SM Masud Karim, MS Rahman ... - ... (ICCIT), 2011 14th ..., 2011 - ieeexplore.ieee.org
Abstract This paper introduces a best approach for Least Significant Bit (LSB) based on
image steganography that enhances the existing LSB substitution technique to improve the

Library website:
www.library.up.ac.za
E-Resources:
Databases A-Z
Finding a particular paper

• Is it a chapter in a book?

1. Try google to find online version of chapter.
2. Library website: Check if book is in the catalogue
3. Last resort: Interlibrary loan or request from authors

**IMPORTANT**
1st - 3rd year students can request items from UP main and branch libraries only.
4th Year, Honours, Postgraduates & Lecturers can request items from national as well as international libraries.

Before you continue, please check the availability of the item you are looking for from the following:

Electronic Journals A-Z Title List
Library Catalogue
Google
Google Scholar

Still cannot find the item you are looking for?

Request via SACat (On Campus)  Request via SACat (Off Campus)
REFERENCES

MAKING SURE NO ONE HAS ALREADY WRITTEN YOUR THESIS

PAPERS FOUND ON ONLINE DATABASE

PAPERS FOUND FROM OTHER PAPERS' REFERENCE LISTS

PAPERS ACTUALLY READ: 107

PAPERS ACTUALLY UNDERSTOOD: 5

PAPERS ACTUALLY RELEVANT TO THESIS: 2

PAPERS INCLUDED IN THESIS REFERENCE LIST: 246

TOTAL PRINTED OR PHOTOCOPIED: 248

PAPER YOUR ADVISOR WROTE TEN YEARS AGO

PAPER YOUR ADVISOR HAD FORGOTTEN TO TELL YOU ABOUT

phd.stanford.edu
Jorge Cham © Stanford Daily
Academic Reading

• So, you have a paper that may be related to your topic. How do you actually read it? Academic reading is not usually done for fun.

• Make sure that your purpose is clear.
  – You must know what you are looking for before you start reading.

• Skim to decide if it is worth reading in-depth.
  – Reading everything in-depth is usually not feasible.

• Read the parts that are relevant in detail and make notes.
  – Some references will just be 1 sentence in your report, others could be a few paragraphs.
  – Some papers you will study in-depth and keep returning to them.

• Understanding what you read
  – If you don’t understand an important paper, then discuss with your supervisor.
Referencing

• Referencing must be accurate in content and in style.
• The quality of academic work is often judged by the references.
  – How many do you have?
  – Are they good sources of references (articles, etc.)?
  – Are some references current?
  – Are the publications in reputable journals/conference proceedings?
  – Do you have the seminal authors/works on the topic?
  – Are the references focussed or all over the place?
• Many different styles.
• Our department does not prescribe a style, but be consistent! (Use the style that your supervisor requires.)
• Use referencing software.
Example referencing style (my preference)

- References are numbered and sorted alphabetically by surname of first author.
- Only references (not a full bibliography), i.e. only sources that are cited in the document.

The second class of software architecture definitions includes externally visible properties as part of the definition. These are commonly seen as quality attributes of the system. Most ADLs do not provide explicit support for specifying quality attributes or strategies through which these are addressed. A notable exception is the aspect-oriented ADLs [25, 26] which use aspects to apply architectural strategies to address quality attributes. Another approach is that followed by Menasce et al. [22]. They define a set of what they call architectural patterns representing concrete designs of architectural strategies. They show that components implementing these patterns can not only be statically selected in the software architecture specification, but can also be dynamically selected by self-adapting software architectures.


Journal article

• Required information:
  – Name of the author(s), title of the paper, name of the journal (in italics), volume number, issue number, range of pages, year.


@article{08AHN00,
  author = {Ahn, Chang Wook and Ramakrishna, R. S.},
  title = {On the Scalability of Real-Coded Bayesian Optimization Algorithm},
  journal = {IEEE Transactions on Evolutionary Computation},
  volume = {12},
  number = {3},
  month = jun,
  year = {2008},
  pages = {307--322}
}
Book

• Required information:
  – Name(s) of authors (or editor(s) if a compilation), name of book (in italics), publisher, address, year of publication.


@book{97BAC00,
  editor = {B"{a}ck, Thomas and Fogel, David B. and Michalewicz, Zbigniew},
  title = {{Handbook of Evolutionary Computation}},
  year = {1997},
  publisher = {Oxford University Press},
  address = {Bristol, UK},
}
Conference paper

• Required information:
  – Author(s), Title of paper, Name of conference proceedings (in italics), page number, year.


@InProceedings{98BAR00,
    author = {Barnett, Lionel},
    title = {{Ruggedness and neutrality -- the NKp family of fitness landscapes}},
    booktitle = {Proceedings of the Sixth International Conference on Artificial Life},
    year = {1998},
    location = {Madison, Wisconsin, United States},
    pages = {18--27},
}
Book Chapter

- Required information:
  - Author(s) of chapter, title of chapter, editor(s) of book, title of book (in italics), chapter number, page numbers, publisher, address, year.


@InCollection{87GOL00,
  author = {David E. Goldberg},
  title = "Simple Genetic Algorithms and the Minimal Deceptive Problem",
  booktitle = {Genetic Algorithms and Simulated Annealing},
  pages = {74--88},
  chapter = {6},
  editor = {L. Davis},
  year = {1987},
  publisher = {Pitman, London},
}
Dissertation / Thesis

• Required information:
  – Author, title of dissertation/thesis, type (Masters or PhD), name of institution, year.


@MastersThesis{04IZQ00,
  author = {Eduardo Izquierdo-Torres},
  title = "Evolving Dynamical Systems: Nearly Neutral Regions in Continuous Fitness Landscapes",
  year = {2004},
  school = {University of Sussex},
}
Technical Report

• Required information:
  – Author(s), title of report, report number, institution, year.


@TechReport{09HAN00,
  url = {http://hal.inria.fr/inria-00362633},
  title = {{Real-Parameter Black-Box Optimization Benchmarking 2009: Noiseless Functions Definitions}},
  author = {Hansen, Nikolaus and Finck, Steffen and Ros, Raymond and Auger, Anne},
  type = {Research Report},
  institution = {INRIA},
  number = {RR-6829},
  year = {2009},
}
Plagiarism

- Plagiarism is using the work of others and pretending that it is yours.
- Always credit the work of others by referencing the source of information.
- Make sure that you are clear about what is plagiarism and how to avoid it.
The actual literature review

• This will be a chapter in your final report (after the Introduction and before your contribution).
• Rather give it a relevant name (not “Literature review”).
• Structure:
  1. Introduction: define the topic and provide a context for the rest of the chapter.
  2. The Body:
     • Sections for all your grouped themes.
     • Start broad and then focus.
  3. Conclusion:
     • Summarise major contributions in the literature
     • Evaluate the state of the art
     • Point out the gaps or flaws
     • Contextualise your work (which will follow in the rest of the report).
References
