Importance of Using Scientific Publications

• Some material on the Internet is very good, some can be highly unreliable.
  • Main problem: lack of quality control.
• Students need to learn to use (official) research publications.

Research Publications

• Research publications are mainly
  • Articles in scientific Journals (paper or electronic),
  • Articles in proceedings,
  • Articles in handbooks,
  • Research monographs,
  • Text books,
  • Lecture notes (published)
  • PhD theses,
  • Master theses,
  • some other official published material having various names (e.g. “tutorials”, . . .).
Scientific Publishers

• Some big ones are:
  • Springer,
  • Elsevier,
  • Oxford University Press,
  • Cambridge University Press,
  • Harvard University Press,
  • MIT press,
  • many many more (some big and some small).

• Your tutor/supervisor can usually be a good guide.
• Usually material by scientific publishers is highly regarded.
  • But they usually have as well non-scientific publications.
• However electronic publications bypassing scientific publishers is increasing.

Location of Scientific Publications

• Good guidance: Search on Google Scholar (see Lecture 1).
  • But Google scholar finds as well non-published material.

Scientific Publications

• Scientific publications have to be as objective as possible.
  • Not heavy motivation to convince the reader of something – no attempt to manipulate the reader.
  • Pictures restricted to those needed to explain the topic.
  • More dry.
• Essays and theses written for this module should be of similar nature.
• There are as well some more magazine like scientific publications.

Journals

• Usually journal articles are the best quality one can obtain.
• From scientific publishers such as Springer, Elsevier, Oxford University Press, Cambridge University Press, and many more.
• Subscriptions very expensive (typically 1000 £ per year).
• Swansea University has electronic subscriptions to many journals.
  • Off campus using Athens.
  • On Campus (might require Athens login).
• Access via DOI pages (see lecture 1).
Proceedings

• Collections of articles.
  • Usually related to a conference (published before the conference or after).
  • Might be as well collections of articles related to a birthday or retirement of somebody.
  • There are as well specific collections of articles related to a topic.
    • E.g. articles related model checking (a verification technique).
    • Sometimes called “Tutorials” (in book form).

Electronic Journals

• New trend, but many still have to build up a proper reputation.
• Sometimes maintained by small groups, associations, and free.
• Some maintained by big publishers (and require expensive subscriptions).
• Open access or not.

Handbooks

• Handbooks are often high quality collection of articles on a certain topic.
• Highly regarded if directed at a scientific audience.
• Handbooks are often very expensive and highly regarded.

Research Monographs

• Books on research topics.
• Highly regarded.
• Typically rather dry.
• Often from scientific publishers such as Elsevier, Springer, Oxford University Press, Cambridge University Press, and many more.
Textbooks

- More accessible monographs.
- Directed towards students or the general audience.

Lecture Notes

- Several series by publishers.
  - Most important in computer science: Springer lecture notes in computer science.
  - Other series, such as
    - Springer lecture notes in Artificial Intelligence,
    - Springer lecture notes in Mathematics;
    - Lecture notes in logic (Cambridge University Press and A.K. Peters),
  - Original idea was: lecture notes of very advanced courses.
  - Nowadays mainly:
    - Proceedings volumes,
    - Collection of articles,
    - Research monographs with restricted audience.

Material on the Web

- Many new discoveries are first presented on the Web.
- Lots of material is of high quality.
- Especially many Wikipedia pages (not all!!!) are very good.
- Often slides (and sometimes videos) of presentations (especially at conferences) are very good.
- You can (and in fact should) use them but you should have in your references as well non-web articles.
  - Journal articles, proceedings articles etc. available from the web count as "non-web-articles".

Scientific Publications

Writing References
Good Practice for Essays, Theses, and Dissertations

- Everything you should use should be cited.
- It is expected that your documents contain citations.
- Citations are regarded as something positive.
  - A good scientist explains clearly his sources so that the reader can verify his sources independently.

Writing References

- Many different styles occur in the scientific literature.
- Most important:
  - Uniform style.
  - Uniform fonts (same font, same font size, especially in Word).
  - Alphabetically sorted (by last name of first author or first main word of title, if no author given).
  - Completeness of the citations. It should allow others to locate the article in question.

Keep track of References and Sources

- Collect references for everything you use.
- Collect as well sources.
  - You are required to provide copies of the web pages you used in your MSc thesis on request.
  - Web pages change fast, you might not find the same information when you want to check it later.
  - Articles might no longer available if you look for them later
    - Might be removed.
    - Some subscriptions (e.g. Springer) are only for a limited time period (e.g. last 15 years).

Reference Management Software

- There are lots of different reference management systems, which allow to
  - administrate your bibliography (in the form of a database),
  - format your bibliographies really good.
- You need to insert only fields needed such as “author”, “title”, “year”, the system will format the entries for you.
- An overview over reference management software including word processor integration can be found at:
- For \LaTeX the most frequently used is BibTeX.
  - Used by myself
- The university has a site license for EndNote, which integrates with Microsoft word and OpenOffice/Libreoffice.
- There exist other systems, e.g. RefMan, RefWorks.
Obtaining Bibliography Entries

- The pages from publishers for articles (especially DOIs) often have links for creating very good references for the above mentioned systems.
- For mathematical articles you can go to “Zentralblatt Math” or “Mathematical Reviews” to obtain good bibliography entries.
- Google scholar allows to create bibliography entries for some of these systems.
  - Sometimes good, sometimes not very good.
  - I only use it if I can’t get an entry from the publisher, and usually need to adapt it.
- If you search in a search engine for title words and/or author of an article plus “bibtex” (or Endnote or ...), you often find good entries (but quality varies).
- Entries provided by the authors are often the best references available.

Adapting of Entries

- Many bibliography entries found by the above methods (including from publishers) need some tweaking.
- For BibTeX:
  - special characters in BibTeX need to be replaced by TeX commands.
  - Letters required to be in capital need to be put in {} (e.g. \{Java\})
  - BibTeX will in titles convert all capitals into lowercase if not surrounded by {...}.

Identifying a Bibliography Style

- Best to take one or two articles, look at their bibliography and follow their style uniformly.
- Ask your tutor or supervisor to correct your bibliography.
- In the following presentation of one style
  - you can use most styles occurring in the scientific literature!!
  - however you should be uniform.
- If you use a bibliography managing system, often you can rely on the system formatting it for you (if your entries are correct! – tweaking necessary)

Bibliography Style alpha

- One of the most commonly used styles from Bibtex.
- Abbreviations used are of the form [Ab07].
  - Ab are the first two letters of the author (here Andreas Abel).
  - 07 stands for 2007.
  - 96 stands for 1996.
- Other system is numbered (e.g. [3], [12]).
  - Difficult to guess in text what is meant by a citation [13].
  - Because of alphabetic order, numbers change when adding new publications. Difficult to maintain, if you don’t use reference management software.
  - Therefore this (or similar non-numbered styles) are especially recommended if you create your bibliography by hand.
Multiple authors: use the capitals of the authors, e.g. [BKS96] for an article by authors with surnames Berger, Kullmann, Setzer, or [BK03] for an article by authors with surnames Berger, Kullmann.

If no author available take the letters of the first main word in the title.
- Omit words such as “The”, “On”, ....
- “The art of computer programming” published 2001 without author is abbreviated as [Ar01].

Web pages have always a title (displayed in the browser) and sometimes an author.

Example Entry: Journal


- Authors in the order as they occur in the article (often alphabetical, but not always).
- Title in Roman font, Journal name in italic.
- 173 is the volume of the journal (usually there is one volume per year, sometimes there are more volumes per year or volumes stretching over several years).
- 17 - 39 are the pages.
- 2007 is the year.
- Note order, punctuation: Authors. Title. *JournalNameAbbreviated*, volume:page – page, year.

Example: Proceedings


- Note the keyword “In:”
- In this example we have a “Lecture Notes in Computer Science” volume, which is cited by writing instead of the publisher Springer Lecture Notes in Computer Science + number.
Example: Book

[ML84] Per Martin-Löf. *Intuitionistic type theory.*

- Author is abbreviated as ML (and not Ma) since it is a double name.
- Order: Author. Booktitle. Publisher, LocationOfPublisher, year.
- If the publisher is well known (e.g. Springer, Elsevier), one can omit the location of the publisher.
- Sometimes a book (as will have handbooks, proceedings below) have an editor instead of an author.
  - Then write e.g. “John Smith (Ed.)” or “Andreas Abel, Helmut Schwichtenberg (Eds.)”
  - or alternatively “John Smith, editor”, or “Andreas Abel, Helmut Schwichtenberg, editors”,

Handbook Articles

- You can reference the whole handbook as a book. (You can cite as well a complete proceedings volume as a book).
- You can reference individual chapters separately, especially if by different authors).
- References of articles in the same was as proceedings volumes.

Unpublished


- Author is abbreviated as McB (and not Mc) because of the second capital in his name.
  (Don’t worry about such sophisticated abbreviations, using “Mc” would have been perfectly okay).
- Extended abstract was here part of the title.

Unpublished (Continued)


- Minidescription is here “Extended abstract” as provided by the author. Other descriptions occurring are: “Slides” (if it are the slides of a talk). “Draft”, “Manuscript” (if it is hand written), “Blog”.
- If no year given explicitly, write instead: downloaded date/month/year, e.g. downloaded 12 July 2011.
- You need to provide information on how to obtain this article
Citing

- Citing in the text is written as follows:
  - In [McB11], p. 50, McBride writes: “Let’s see how things unfold”.
  - In [ML84], p. 20, Martin-Löf introduces the $W$-type.
  - Java is consistent [CA03,De05].
  - Java is consistent [CA03], p. 15.
  - It has been shown [CA03,De05], that Java is consistent.

Referencing parts of a publications

- **Don’t** put references to a specific page (unless it is an independent article or abstract) into your references.
- From a handbook or proceedings volume you can reference individual chapters separately, if they are separate entities (especially if by different authors).
- From a monograph one would in most cases not put references to individual sections into the bibliography.

References


(Text should be justified, didn’t happen on my slides because of use of slide environment)
Discuss with Tutor Supervisor

- Please ask your tutors and supervisors for advise on
  - correct referencing,
  - correct writing of references,
  - correct formatting of references.
- Your supervisor/tutor might prefer a different style than the one presented.
- Different research groups have different traditions.
- Note that the style presented was only one example of how to format references.
  - What is most important is that you use one style uniformly.

Summary

- Use **scientific publications** (journals, proceedings, books, monographs).
- References should be
  - **consistently formatted**,  
  - **alphabetically sorted**,  
  - **sufficient to locate the source**.
- Easiest way to obtain good references is by using **reference management software**.
- Use **citations frequently**.
- Refer to example references in the scientific literature.
- Ask your tutor or supervisor about formatting.