

CM50175 – Research Project Preparation

Picking a Project and Reading a Research Paper

Joanna J. Bryson

`jjb@cs.bath.ac.uk`

`http://www.cs.bath.ac.uk/~jjb/here/teaching.html`

Picking a Supervisor — Basics

- Do you share interests?
- Do they have more than one project you're interested in? (list them both / all!)
- Are they open to **your** project? (if you have one.)
- Are you likely to be able to communicate?
- How much supervision do you need? How frequently?

Picking a Supervisor — Strategic

- Has everyone else chosen them too?
- Has **no one** else chosen them?
- What do you want to do next?
- **Don't Panic!**

Picking a Project (More Next Week)

How will you prove what you've done?

- Statistics and Measurements. Examples:
 - Average, best & worst case performance with various features.
 - Usability – user studies of your system.
 - Evaluations — e.g. how long it took **you** to understand packages or APIs.
- Formal Proofs.
- Demonstration.
- Other people's evidence — the literature.

Literature Research Helps You By...

- Providing data you don't have time to gather.
- Providing arguments you haven't had time to think of.
- Telling you what other people currently find relevant.
- Telling you what other people currently find useful.

In short, a literature brings you into a community. It provides you with their wisdom, and gives you clues about how to be a valued participant.

Plagiarism

- If you are found guilty of plagiarism, then you won't get your degree.
- Plagiarism is not just copying!
- Definition: **Plagiarism** is whenever you use anything (idea, data, picture, text) from another source **without acknowledging that source.**
- Getting material from other sources is **good**,
 - as long as you say where they came from, **and**
 - you contribute some material of your own.

Referencing and Citation: The Importance of Saying Where you Got Your Ideas

“Iraq’s declaration even resorted to unabashed plagiarism, with lengthy passages of United Nations reports copied word-for-word (or edited to remove any criticism of Iraq) and presented as original text.”

Condoleezza Rice *Why We Know Iraq Is Lying*, New York Times, January 23, 2003.

Referencing and Citation: The Importance of Saying Where you Got Your Ideas

“I was a bit disenchanted because they never cited my article . . . any academic, when you publish anything, the only thing you ask for in return is that they include a citation of your work... There are laws and regulations about plagiarism that you would think the UK Government would abide by.”

Ibrahim al-Marashi, quoted in The Times (London)
February 7, 2003.

Reading Literature

- How good is the source?
- How do you read it?
- What should you look for?

How Good is the Source?

- Good journal articles are reviewed by three reviewers plus an editor. The paper is not accepted until everyone is satisfied. This can take years!
- There are less-good journals. Indications of journal quality:
 - Editing / printing / publisher.
 - Who is on the board / who publishes in it.
 - **Impact factor.**
 - Quality of articles.

How Good is the Source?

- Good journal articles.
- Good conferences also have several reviewers, but they only have a few weeks to review, and there may be no double-checking that the authors conform to the reviewers comments.
- Some conferences have little or no reviewing.
- In fields other than Comp. Sci. and AI, conferences are often based only on an abstract.
- But in AI and CS, some conferences are considered as good as leading journals.

How Good is the Source?

- Good journal articles.
- Good conferences.
- Book **proposals** are reviewed by publishers, editors, sometimes external experts. But books are **not** really peer reviewed.
- Magazines, newspapers and the web can expose you to ideas and help you understand things, but they are not **really** peer reviewed.

How do You Read a Paper?

- First: title, abstract, authors
- Second: bibliography
- Next: results **briefly** \Leftrightarrow (discussion / conclusion)
- Finally: introduction / background;
(methods \Leftrightarrow results)
- Alternative: Skim the whole thing quickly for structure, then revisit for real understanding parts that seem important.

What are you looking for? (First)

- abstract: What is it about?
not: What did they prove?
- bibliography: Who do they know about? Where are they coming from?
- results (first pass): What kind of evidence do they have?
- discussion, conclusion: What do the authors consider to be the significance of their results?

What are you looking for? (Next)

- introduction / background: Do they have a good assessment of the literature? Are they current? Do they know about other articles you should read?
- results: Do you believe them? What exactly do they prove?
- method: Is their procedure appropriate? If you changed something, would you expect another result? Could you replicate the work they have done?

What are you looking for? (Next)

- introduction / background: Do they have a good assessment of the literature? Are they current? Do they know about other articles you should read?
- results: Do you believe them? What exactly do they prove?
- method: Is their procedure appropriate? If you changed something, would you expect another result? Could you **replicate** the work they have done?

Replication

- Necessary first step before either extending or overturning a result.
- The only way to know for sure that you understand the research.
- May be difficult / impossible (may overturn the result!)
- Good first part of a project.

Starting Small: Replications and Prototypes

- Make sure you and your supervisor understand your project.
- Make sure you know what the hard parts of your project are.
- Make sure **something** works!
- Use as a standard of comparison.

Summary

- Picking a Supervisor and Project
- Using Literature and Plagiarism
- Reading Literature
 - How good is the source?
 - How do you read it?
 - What should you look for?
- Replication and Prototypes