ERSP: Reading (and talking about) research papers

S14 Week 4
Today’s objectives

• Discuss a research paper to identify contributions and potential future contributions
• Present a research paper in a way that others (with little background) can understand
• List the basics of doing a literature search
The purpose of background reading at this two stages:

- Develop a sense of the research field
- Determine which specific objectives are still open problems
- Figure out what research problems others have addressed
- Learn about technical material you need to understand the research
Paper discussion workshop
(~45 mins, in ERSP groups)

• Your goal at the end of this hour is to be ready to present to the rest of the class the key ideas in the research paper that you read. Your presentation should contain:
  • The high-level motivation behind the work
  • A technical description of at least some part of the contribution of the paper (include some background info to help us understand)
  • An analysis of the results
  • A critique of the work
  • How this paper fits into your research project
Presentation tips/guidelines

- You have no more than 8 minutes for your presentation. Aim for about 6.
- You may use your computer, the board, etc.
- Each member of your group must say something.
- Assume your audience is interested in becoming technically involved in your research. You are trying to get them up to speed on this one area.
- Spend a couple minutes at a very high level, couple minutes getting very technical, and a couple minutes bringing it back to a high level.
Workshop process

• 15 minutes: Generally discuss the answers to the questions that you answered in your reading log. Different thoughts/opinions welcome. Open debate encouraged

• 15 minutes: Start coming to consensus on the main points of your presentation

• 15 minutes: Plan your presentation in detail. Know who is going to say what. What you will write on the board. Develop any necessary visual aids.
Outline of presentation

• The high-level motivation behind the work
• A technical description of at least some part of the contribution of the paper
• An analysis of the results
• A critique of the work
• How this paper fits into your research project
For next week: Learning a technical topic on your own

- Goal for next week: Together with your group, learn a technical topic
- Take the last few minutes of class to identify the core technical topic that you want to learn
For 2 weeks: A Literature Search

• Your goal for next week is to expand out from the paper you have read to get a broader sense of the field. This is a fundamental skill in doing research, and usually the first thing that any researcher in a new area does.

• But how to do this? Google?
A guide to doing a literature search (Quality, not quantity)

• Quality can be measured by:
  • How many others cite the paper/who cites the paper
  • What conference/journal it was published in
  • Your own assessment of the work (harder, since you’re not an expert)
• Know the important journals/conferences:
  • ACM, IEEE
  • Most fields have a “flagship” conference or journal. Figure out what it is.
• Search backward references and forward
• Tools:
  • Google scholar, citeseer (http://citeseerx.ist.psu.edu), raw Google (with care!)