Research Methods
in computer science
Spring 2020

Lecture 6

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Agenda

Research Paper Anatomy
Paper Types
Assignment
Anatomy of a Research Paper

Abstract
Introduction
Related Work
Design and Implementation
Evaluation
Conclusion
Some of the contents in the next few slides from Jennifer Widom’s notes on Writing Technical Papers.
Related Work

You want to give a sense of the old and new work in this area.

Where to look for these?

Organized is better than not organized.

**Important:** Show how your work is related to the body of work you are describing in related work section.
Related work variations

Merged with Introduction
Inter-mingled with relevant sections
Placement of Related Work
The Body of the paper

Depending on the area of work may describe the proposed algorithm, proofs, systems, implementations
Evaluation

Description of experiments and metrics
Results of experiments
Implications of those results

More applicable to the applied areas of computer science.
Conclusions

Not the same as abstract
Short summary of what you did in the project and the implications of the results
Can include lessons learnt and future directions
Quick Exercise

Look through three research papers
Identify the sections we discussed so far
Share with the class any variations
Slightly different take from other disciplines
Figure 3.1. This diagram shows the headings that must be used for this science paper. Please pay careful attention to the boxes with arrows pointing at each elliptical heading box. These boxes are reminders of the content that belongs with each heading.

Types of Papers (mechanical)

Technical Reports
  Project description
  Research paper
Conference
Journal
Magazine

Find out what type your group and community writes.
Which papers are more important?

Conference
Journal
Magazine

What makes a paper more important than others?
Types of Papers (purpose)

- Research Paper
- Survey Paper
- Tutorial
- Technical Report
  - E.g., NIST, Other Orgs
- White Paper
- Vision Paper
- Challenge Paper
Publications – Looking Ahead

Blogs?
Facebook?
Twitter?

.....
HW3

Pick ten papers related to your research

Summarize each paper in 2-3 sentences
  Why is it important?
  Contributions? Strengths? Weaknesses?

Improve related work organization for one of the papers.