A Brief Guide to Writing Papers

• …this is extremely ad hoc 😊

Your Final Project Paper On-A-Slide

• Abstract (short is sweet!)
  • Problem, gap, approach, key results
• Introduction
  • Broad problem and impact
  • “Scientific gap” (what technical aspects have not yet been solved)
  • Summary approach (should include reference to technical gap)
  • Key results
• Approach
  • Background tutorial (if necessary)
  • Your technical innovation (might be multiple pages/sections, with repeated reference to scientific gap)
• Results
  • Main questions that are being investigated in experiments, ref to gap possibly with main results highlighted
  • Data sets, simulator, implementation details
  • Empirical results (might be multiple pages)
• Related Work
  • Don’t just say what’s been done. Point out how prior work relates to yours and to the scientific gap you set forth in the intro.
• Summary/Discussions/Conclusion
  • Summary problem, approach, result, in past tense
  • Discuss open questions, promising research directions
• References

Lesson # 1

• Put yourself into the position of the reader!

Lesson # 2

• Motivate your problem
  • Why does it matter?
  • Why is it not solved yet?
  • What impact would a solution have?
  • What contribution did you make?

Lesson # 3

• It doesn’t matter how you got there
  • “We tried A, it didn’t work, therefore we tried B”
  • “B works. To see, let us consider an obvious alternative A, and show A does not work.”
• Document progress, not just achievement
  • “B works”
  • “B improves over A (current techniques) by x%, which is important because of …”

Reviewer Background Expertise

Reviewers may not be familiar with your area:

• Problem motivation
• State of the art
• Background material
• Notation
• Measures for evaluation
• Significant application domains
Reviewers are Overworked

- Don’t expect them to pay attention to details
- Don’t expect them to read small fonts
- Motivate problem, explain why open, why interesting
- Present one idea, not two, three, ...
- Pick informative title
- A picture is worth 1000 words
- Be concise! Get to the point!
- Run a spell/grammar checker
- Use terminology consistently
- Define abbreviations, avoid them if possible
- Convince reader that experiments fit claims/problem
- Make sure the paper “flows”