

COSC 91/191, Spring 2019
Lecture 3
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1 Announcements

Tom began the class with assorted announcements.

1. Assignment 1 is on the website. The assignment is to write a critique of the organization of his paper “Stupid Columnsort Tricks.”
2. For scribe notes, you should name the file correctly (e.g., `0329.tex`). Write them in second person and avoid passive voice if you can.
3. Tom’s name in this course is Tom, not Professor Cormen.
4. The macros are now available on tahoe. Tom suggests that you try to avoid raw \LaTeX functions and instead use macros, because they’re more readable and easier to change if needed. You will thank yourself later. . . maybe.

2 Abstract of “Stupid Columnsort Tricks”

Tom asked the class to critique the abstract in “Stupid Columnsort Tricks.” Points of discussion included the following:

- Avoiding math if possible (note: some journals do not allow math in the abstracts of their papers),
- Implications of the word “result” in computer science (especially algorithms) papers,
- Making the relevance of a paper explicit in its abstract,
- How to clarify sentences by using the word “how,” and
- A typo involving a missing *s*.

3 Keywords

After an abstract, some papers include keywords or subject classifications. Certain journals require that their papers include keywords. The method of selecting the keywords varies from journal to journal. Some journals allow authors to select their own keywords, whereas other journals require that authors choose keywords from a predetermined group of keywords.

4 Writing the Introduction

4.1 Overview

Consider this: each reader's attention is a bank account. The account has some kind of attention capital at the beginning of the paper, but the capital monotonically decreases as the reader reads more of the paper. The goal of an author is to ensure the reader gets through the paper without going attention bankrupt.

With attention bankruptcy in mind, the introduction is arguably the most important part of the paper because it's the first place you could lose a reader. If the introduction doesn't get to the point, the attention capital plummets. The introduction should draw in the reader and make the reader *want* to know more about the contents of the paper.

4.2 Good introductions

A good introduction should state the problem, the results, the importance of the problem, and (unless the paper is extremely short) an outline of the rest of the paper. The introduction sets the tone for the paper. Is reading the paper going to be a joyful experience or a hellish one? With the right introduction, the former.

Make the opening paragraph interesting so that you preserve the reader's attention capital. In addition, state the paper's results as early as possible. Why make the reader wait for the good stuff? Don't worry about repeating information you've already covered in the abstract—people are comforted by the familiar and might read the paper some time after having read the abstract. Many introductions also include a paragraph describing the outline of the rest of the paper. This road map paragraph should have some kind of story woven through it so the reader can understand the flow of your paper. Finally, keep the introduction as short as possible.

4.3 Bad introductions

The above points make for a good introduction, but what makes for a not-so-good introduction? For starters, a lengthy list of definitions in the introduction is a sure-fire way to bore a reader. A good rule-of-thumb is to introduce definitions JIT: Just In Time. Define new concepts right before you first use them in the paper. This way, the reader doesn't get bored reading through a long list of definitions with little immediate relevance and doesn't have to fish through the introduction for definitions every time a new concept is introduced in the paper.

Another way to bore a reader is to include numerous paragraphs about related work. You should definitely do your due diligence and pay homage to the work of others that has paved the way for you, but you don't necessarily need to do all of it in the introduction. If you're including discussions about related work in the introduction, instead of simply describing related work, provide some kind of comparison of your work to existing work. If you're comparing your work to related work, make sure that you can back up your claims, especially if these claims are qualitative. For example, if you state that your algorithm has a better running time than an algorithm described in another paper, you can easily prove your claim. However, if you write something like "our system is better than X," a reader can easily refute your claim.

4.4 When to write an introduction

The appropriate time to write an introduction can be a little confusing. An introduction is supposed to set the tone for the rest of the paper, so it makes sense to write the introduction before the rest of your paper. But

an introduction should also include some kind of discussion about the results, which implies that you should write the introduction after the rest of your paper. So, do you write the introduction before or after the rest of the paper? The answer is both. Write the introduction before the rest of your paper. Then, after you've finished your paper, go back and revise the introduction, tailoring it to the directions your paper ended up taking (directions you perhaps didn't anticipate) and the results.

5 Introduction of “Stupid Columnsort Tricks”

Tom also asked the class to critique the introduction in “Stupid Columnsort Tricks.” Points of discussion included the following:

- Ensuring that there is variation among the first words of sentences in the same paragraph,
- Clarifying enumeration (e.g., confusion about multiple items associated with the number “1”), and
- Maintaining brevity (some class members contended that the second paragraph was unnecessary).

6 Miscellanea

It is crucial to note that Tom is a pro at using the word *hark*. Furthermore, Tom doesn't like emails starting with “I hope you are well.” Just get to the damn point.