Reading: Justin Zobel, Writing for Computer Science, second edition, Chapters 1 and 9.

In this lecture, our topic focuses on writing, specifically on the title and author list in a paper. Our writing can be presented as research paper, survey, thesis, proposal, essay, grant proposal, book, etc. We can effectively communicate good ideas to others by writing, and readers can be educated from our writing. The audience may include scientists, educated readers, etc. An author should try to explain topics at every level of understanding in the paper. Think about what you want to say and do not write anything if you do not know what to say. A paper should tell a story as simply as possible, and it should describe the contribution, what worked and why it worked.

The title is the first element that readers see in a paper. Many people read only the title rather than the entire paper. Therefore, a good title should be attractive and concise, with significant words that accurately describe the content. Think about the following titles:

1. On notions of information transfer in VLSI circuits
   *On the power of interaction*
   - Bad: A paper would obviously explain some notions, thus “on the notions of” in the first title and “on” in the second title are vague and meaningless.

2. Computing the eigenvalues and eigenvectors of symmetric arrowhead matrices
   - OK: Some of us argued about using “eigen” to substitute for “eigenvalues and eigenvectors.” Verbs are important to a title.

3. How and how not to check Gaussian quadrature formulae
   - OK: Someone argued the title sounds weird (“how and how to”) when we read.

4. Gaussian elimination is not optimal
   - Bad: The title does not say what the real result is (for this particular paper).

5. ALGOL 68 with fewer tears
   - Good: This title is attractive. Most likely the reader would be curious to know the presented contents underneath.

6. Nineteen dubious ways to compute the exponential of a matrix
   - Good: Intriguing because it shows how not to do something.

7. Can you count on your calculator?
   - Good: here, the ambiguity is interesting and important.

8. Can one hear the shape of a drum?
   - OK: This title is an interrogative sentence, which attracts readers.
9. The perfidious polynomial
   - Bad: This title is too “English” and the word “perfidious” is obscure. The alliteration is interesting, however.

10. Fingers or fists? (The choice of decimal or binary representation)
    - Bad: This title contains parentheses, which is not recommended.

Moreover, some other good examples of titles were also discussed in the lecture, such as “How near is a stable matrix to an unstable matrix?”; “Regression diagnostics: identifying influential data and sources of collinearity”; “Performing armchair roundoff analyses of statistical algorithms”; and “Tricks or treats with the Hilbert matrix”.

Subsequently, we discussed the title layout in a paper. A title that cannot fit on one line needs line breaks. However, do not start a line with a weak word such as “for,” “on,” or “of.” It would be better to fit a complete phrase in one line.

In the last part of our lecture, we discussed the author list, which comes after the title in a paper. The authors can be listed alphabetically or based on the level of contribution they made to the paper. Authors should list their names consistently so that their publications can be easily indexed and referenced.