Prof. Ron Shamir
Dept. of Computer Science
School of Mathematics
Tel Aviv University
February 2000

Seminar on Algorithmic Problems in the Human Genome Project

Guidelines

What, How and Why:

- Give clear definitions of the terms you are using, and of the problems you will study. Include examples to add intuition. You may go over these fast if the background and terms were defined and used in previous lectures, but do not skip them. You should not "lose" anyone in the audience at this stage!
- Provide motivation for the problem: why is it interesting? relevant?
- If you are assigned a paper with more material than you can include in your talk (this is almost always the case), you should make a judicious choice what to include and what to leave out. This choice shows how well you understand the paper and the context. Obviously all key results should be stated, but only some of them should be proved. It is of the utmost importance to include the essence of what is most original and important in this paper. (This is not always the technically hardest result).
- Seminar proof style is very different from that of first year lecture proofs and from the style of proofs written in a paper. You should make an effort to convey the main ideas and leave out standard details. Some level of technicality is essential, but keep it to the most important and most novel aspects of the paper. Usually proving in detail 1-3 theorems or key lemmas will suffice. For the rest (as well as for the key theorems that you prove in detail) you should supply intuition on why the statement is correct or why the algorithm works as stated. This is one of the hardest parts, as (alas,) many papers are written in a style devoid of that intuition.
- Plan your time, and make several "dry runs" of your presentations, timing yourself. Make plans what to skip if you run out of time so that the talk does not end before you reached the "punch-line". Leave 5-10 minutes to questions, out of which at least 3-5 minutes are left after the end of the talk.
- Try to include something in your presentation that was not in the original paper: A simpler proof, a stronger result, a variant, insights. Do not be shy and say explicitly in your presentation that this is your own contribution!
- Many presentations will cover both an algorithmic part and a more experimental part dealing with real biological data. Keep a good balance between the two. The main focus should be on the algorithmics. However, you should fully understand and explain in class the biological part and the specific choices made in analysis of the real data.
- An excellent guide on how to present a theoretical computer science talk, by Ian Parberry, is available at http://hercule.csci.unt.edu/ian/guides/speaker.html. Note that some presentations in the seminar will have a considerable biology component, so take these guidelines with a grain of salt.

- Consult the lecture notes of my 1998-9 course Algorithms in Molecular Biology at http://www.math.tau.ac.il/~shamir/algmb/algmb98.html for the basics of the area, and for additional bio- and bioinfo- literature.

Technicalities:

- Consult the course homepage http://www.math.tau.ac.il/~shamir/seminar/00/main.html for ongoing updates.
- Prepare slides (transparent, for overhead projector, or electronic for ppt-type presentation). Use the blackboard sparingly to save time and only for critical points.
- If your talk is given two hours, plan for a break in the middle.
- If you need a pc projector for your talk, you should coordinate this at least a week in advance with the school's system group.
- Make 15 xerox copies of your slides in 15 copies and bring them to class, so that everyone can have a copy in front of him/her during the lecture (ask the workers in the copy room on the first floor to do this with my permission. Sonia can help you if there are obstacles here.) Do not plan to do the copying on the last hour before the seminar (remember Murphy's law..).
- Send me email with the presentation electronic version (slitex or Powerpoint) attached immediately after the seminar.

How your grade is determined:

- 50% understanding of the material
- 40% presentation of the material
- 10% good choice of what material to present
- 10% bonus on originality
- -10% if you do not complete on time: Punctuality is crucial!