Technical Presentation

[ECEA0600 Academic Writing Skill for Research Publication]

Technical Presentations

- Technical presentations serve engineering, scientific and high tech purposes, describing advances in technology, problem resolution, product design and project status.

- In general, technical presentations serve one of two purposes
  - To inform
    - Knowledge transfer, classroom instruction
  - To persuade
    - Convincing others to adopt a design approach or accept the results of an evaluation process

Why Presentation Important?

- The audience can be decision makers, customers, or a crowd.
- A good presentation can make your work highly appreciated.
- A good presentation can bring you a good opportunity.
- Good presentation helps improve your and your work
  - Chance to review your own work
  - Chance to interact with others

Improving Presentation Skill

- Reserve sufficient time
- Develop presentation skill!
  - Learn from others
  - Build your own presentation style
- Practice

Presentation Goal

- Know the goal of your presentation
  - To explain or to persuade
  - To help audience
  - What should the audience remember after the present?
- Design your presentation to achieve the goal
  - Find the most effective introduction, content, figures, examples, results, etc. to achieve the goal.
- Decide what should be included and what should not be.
  - Focus on the goal
- Then, organize the selected content

Content

- Following common practice is often a safe choice.
- Top-down approach
  - First, present your main idea in a simple and intuitive way.
  - Then, explain the detail.
- Design slide to build up the understanding of the audience
- Prepare 1~2 key slides and key figures that explains your idea intuitively

Content

- Do not put too much or too little content on a slide
  - In general, 1 min/slide
- Equation can be the worst or the best way to explain your idea
  - Depends on the audience
- Prepare intuitive tables and graphs
  - Don't forget legend
  - Explain what the data means
- Try to predict the response

Audience

- The audience's viewpoint is different from the presenter's view
- Why the audience is here?
- What they want or need?
- What is their background?
- How much interested are they?

Interaction with Audience

- Be active and positive
- Be confident, but do not exaggerate
- Pay attention to audience
  - Try to help them
- You don’t have be nervous
  - In general, their goal is not to judge you

Speaking

- Make eye-contact
- Breath deeply
- Do not rush
- Do not explain too much detail
- Do not spend much time on the topics that are less important or the audience already knows
- Emphasize important words
- Stay focused on the topic and the audience

How to Give a Technical Presentation

- https://homes.cs.washington.edu/~mernst/advice/giving-talk.html

- The content
- The slides
- The presentation
- In-class presentations
- Practice talks

Introduction

- Think about the presentations you attend or have attended
  - What was boring about the other presentations?
  - What was interesting about them?
  - What did you take away from the presentation?
  - What could you have told someone about the topic, 30 minutes after the end of the presentation?

Know Your Goal and Audience

- Before you start preparing a talk, you need to know your goal and know your audience.
  - You will have to customize your presentation to its purpose.
  - Even if you have previously created a talk for another venue, you may have to make a new one

- The goal of a talk you give to your research group is to get feedback to help you improve your research and your understanding of it
  - Plan for a very interactive style, with lots of questions throughout.

Three Things to remember

- In either case, you have done some research, and you need to convince the audience of 3 things:
  - The problem is worthwhile
    - It is a real problem, and a solution would be useful
  - The problem it is hard
    - Not already solved, and there are not other ways to achieve equally good results
  - You have solved it.

- If any of these three pieces is missing, your talk is much less likely to be a success.

Focus on Key Points

- Ask yourself, “What are the key points that my audience should take away from the talk?”
  - Then, elide everything that does not support those points.
- If you try to say too much (a tempting mistake), then your main points won't strike home and you will have wasted everyone's time.
  - D*o not* try to include all the details from a technical paper that describes your work
- Different levels of detail and a different presentation style are appropriate for each.
  - Reformat the table to be more readable and to remove information that is not essential.
  - The talk audience does not have as much time to comprehend the details as a paper reader does.

Do NOT Fit Too Much

- Do not try to fit too much material in a talk.
  - About one slide per minute is a good pace (if lots of your slides are animations that take only moments to present, you can have more slides).
- Remember what your key points are, and focus on those.
  - Don't present more information than your audience can grasp;
- If you try to fit the entire technical content of a paper into a talk, you will rush, with the result that the audience may come away understanding nothing.
  - It's better to think of the talk as an advertisement for the paper that gives the key ideas, intuitions, and results
  - That does not mean holding back important details — merely omitting less important ones.

Don’t Miss Slides

- Just as there should be no extra slides, there should be no missing slides.
- If you have an important point to make, then have a slide to support it.

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Slide Titles

- Use descriptive slide titles that helps the audience to appreciate what the specific contribution of this slide is
- Do not use the same title on multiple slides
- If you can't figure that out, it suggests that you have not done a good job of understanding and organizing your own material.

Introduction.

- Start your talk with motivation and examples
- For the very beginning of your talk, you need to convince the audience that this talk is worth paying attention to
  - It is solving an important and comprehensible problem.
- Your first slide should be an example of the problem you are solving, or some other motivation.

Outline Slides

- Never start your talk with an outline slide.
  - That's boring, and it's too early for the audience to understand the talk structure yet.
- Outline slides can be useful, especially in a talk that runs longer than 30 minutes
  - They helps the audience to regain its bearings and to keep in mind your argument structure.
- Present an outline slide with the current section indicated via color, font, and/or an arrow at the beginning of each major section

Conclusion

- The last slide should be a contributions or conclusions slide, reminding the audience of the take-home message of the talk.
- Do not end the talk with future work, or with a slide that says “questions” or “thank you” or “the end” or merely gives your email address.
- Leave your contributions slide up after you finish the talk while you are answering questions.

Keep Slides Uncluttered

- Don't put too much text (or other material) on a slide.
  - If the audience has to read a lot of text, they will tune you out, probably missing something important.
  - Diagrams must be simple and clear, and the text must be telegraphic.
- A rule of thumb
  - 3 lines of text for a bullet point is always too much
  - 2 full lines is usually too much.
- Shorten the text, or break it into pieces
  - Subbullet points

Do Not Read Your Slides

- Reading your slides verbatim is very boring and will cause the audience to tune out.
- If you find yourself reading your slides, then there is probably too much text on your slides.
- The slides should be an outline, not a transcript.
  - That is, your slides should give just the main points, and you can supply more detail verbally.

Discussing System Architecture

- Explain whatever is important, interesting, or novel about your decomposition
  - Don't just read the names of the components or give low-level details about the interfaces between them.
- Or discuss how the parts work together to achieve some goal that clients of the system care about
- Or use other techniques to give high-level understanding of the system rather than merely presenting a mass of low-level details.

Text

- Keep fonts large and easy to read from the back of the room.
  - If something isn't important enough for your audience to be able to read, then it probably does not belong on your slides.
- Use a sans-serif font for your slides.
  - Serifed fonts are best for reading on paper, but sans-serif fonts are easier to read on a screen.

Figures

- Make effective use of figures.
  - Avoid a presentation that is just text
- Images and visualizations are extremely helpful to your audience.
  - Include diagrams to show how your system works or is put together.
  - Never include generic images, such as clip art, that don't relate directly to your talk.
- When you include a diagram on a slide, ensure that its background is the same color as that of the slide.

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- **The presentation**
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Eye Contact

- Make eye contact with the audience.
  - This draws them in.
- It also helps you determine
  - When they are confused or have lost interest
  - Whether your pacing is too fast, too slow, or just right.

Stand and Face the Audience

- Don't give a talk while seated.
  - Standing gives you more energy, the talk is more dynamic, and it is easier to maintain eye contact.
- Do not face the screen, which puts your back to the audience.
  - This is offputting, prevents you from getting feedback from the audience's body language, and can cause difficulty in hearing/understanding you.
  - Do not look down at your computer, either, which shares many of the same problems.
- Don't stand in front of the screen.
- Being animated is good, but do not pace.
  - Pacing is very distracting, and it gives the impression that you are unprofessional or nervous.

Pointing

- When giving a presentation, never point at your laptop screen, which the audience cannot see.
  - Amazingly, I have seen many people do this!
- Using a laser pointer is fine, but the laser pointer tends to shake, especially if you are nervous, and can be distracting.
  - You should use your laser pointer precisely when it's necessary, and turn it off when it is not in use.
- I prefer to use my hand, because the talk is more dynamic if I stride to the screen and use my whole arm (➔ I don't agree)

Think your Goal

- Think about your goal in giving the talk.
  - When presenting to your own research group, be sure to leave lots of time for discussion and feedback at the end,
  - and to present the material in a way that invites interaction after and perhaps during the talk.

  - (When presenting to your own group, you can perhaps give a bit less introductory material, though it's hard to go wrong with intro material. It should go quickly for that audience; you ensure that everyone is using terms the same way; and it's always good to practice giving the motivation, context, background, and big ideas.)

Answering Questions

- Answering questions from the audience is very hard!
- Just as you practice your talk, practice answering questions.
  - Giving practice talks to people who are willing to ask such questions can be very helpful.
- Repeat the question, asking the questioner whether you have understood it
  - You ensure that you have understood the question.
    - You get to frame the question in your own words or from your own viewpoint.
  - You give yourself a few moments to think about your answer.
  - If the audience member does not have a microphone, the rest of the audience may not have been able to hear the question clearly.
- Be willing to answer a question with “no” or “I don't know”.
  - You will get into more trouble if you try to blather on or to make up an answer on the fly.

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In-class Presentations

- For an in-class presentation, you will be judged on how well other people understand the material at the end of the class
  - Not on how well you understand the material at the beginning of the class.
- When you present someone else's paper in class, you should cover not only the technical details, but also what is novel and why others didn't do it before.
  - Focus on what is important about the paper, not just on what is easy to explain or to give an example for.
- Know what your main point is, and don't get bogged down in easier-to-understand but less interesting details.
  - Try not to bring up a topic until you are ready to discuss it in detail — don't bring it up multiple times.
- Encourage questions — it's the best way to deepen understanding — and be able to answer them. If other students wrote questions in a reading summary, be responsive to them.

In-class Presentations

- Don't assume the answer in the form of your question.
  - “What was novel in the paper?” rather than “Was there anything novel in the paper, or not?”
- It can be very effective to ask a question that reveals understanding of a subtle or easy-to-misunderstand point (but an important one!)
- Don't be too abstruse, and don't get bogged down in unimportant details just to show your mastery of them.

Practice Talks

- Always give a practice talk in front of an audience.
  - When you speak out loud, your ideas are likely to come out in a different or less clear way.
- Consider videotaping yourself to see how you come across to
- When giving a practice talk, number your slides
- Distribute hardcopy slides
- Go to other people's practice talks.
  - This is good citizenship, and cultivating these obligations is a good way to ensure that you have an audience at your practice talk.

Audience Analysis

- You need to know quite a lot about your audience before you start to prepare.

- Check list
  - Is the age of your audience generally the same?
    - Seniors, young adults, children or a general mix of ages?
  - Is this audience an informal or formal crowd?
  - Do they likely have the same level of education or have the same standing in their jobs?
  - Do they live nearby or are they from all parts of the country?

Audience Analysis

- Check list (cont'd)
  - Do they share a common interest — (type of job, hobby, business, school)?
  - Is the income of the audience members a factor?
  - Why are they here — because they want to be or because their company sent them (perhaps unwillingly)?
  - And, most importantly, are they counting the minutes until lunch — or are they falling asleep from eating too much at lunch? Be prepared for either scenario.

12 Tips for Knockout Business Presentation

- Know your material thoroughly
- Don't memorize
  - Every presentation needs two major components -- life and energy.
  - Recite from memory and your presentation will be sadly lacking both of these factors.
- Rehearse your presentation
  - If possible, get someone to listen while you rehearse
- Pace yourself
  - Generally, you should spend about one minute per slide.

12 Tips for Knockout Business Presentation

- Know the room
  - Be familiar with the place in which you will speak.
- Copy Your Presentation to the Computer's HDD rather than CD
- Know the Equipment
  - If you are using a microphone, projector make sure them work.
- Use a Remote Control
  - Get up front where your audience can see and hear you.
  - Remember you are the focal point of the presentation.

12 Tips for Knockout Business Presentation

- Avoid Using a Laser Pointer
  - Often the projected light dot on a laser pointer is too small to be seen effectively.
- Do Not Speak to Your Slides
- Learn to Navigate Your Presentation
- Have a Backup Plan
  - What if your projector dies? Or the computer crashes? Or the CD drive doesn't work? Or your CD gets stepped on?

The Dos

- Keep the fonts consistent in both style and size
- Use common fonts that are available on every computer
  - Arial, Times New Roman, or Calibri
- Include relevant photos and graphics such as simple charts or diagrams.
- Make sure that graphics are of good quality so the information is easily deciphered at the back of the room.
- Make labels on charts large enough to be read at a distance.

The Dos

- Use heightened contrast on your slides. Consider creating the same presentation in two formats
  - One presentation with dark text on a light background
  - A second, duplicate presentation using light text on a dark background.
- Keep the number of slides to a minimum
- Allow time for a question period at the end of your presentation.
- Know everything about your topic so that you are prepared for *any* question that arises
- Have detailed handouts ready to give out after the presentation.

The Don’ts

- Don't confuse the audience with disorganized slides
- Don't overwhelm your audience with busy slides.
- Don't use small images or small text on your slides.
- Don't use script type fonts.
- Don't use more than three or four related points on each slide.

The Don’ts

- Don't use a fancy background.
- Don't add pictures for the sake of decoration.
- Don't use sounds or animations unless they are to emphasize a point.
- Don't use acronyms unless all members of the audience are familiar with them.
- Don't include more than four or five items on a chart.

Q&A