CSCI 4210/6210: Giving Technical Presentations (and how to read)

A Pep Talk
Based on Simon Peyton's Jones Article and Presentation (see reading list)
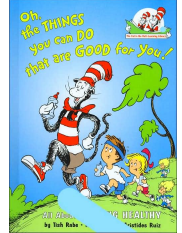

Motivation : Why is it Necessary (to present your work)?

The greatest ideas are worthless if you keep them to yourself.

- It is good for you!
- Helps you to communicate better
- Helps you understand better
- Helps you *organize* information & your thoughts (if needed).
- Helps you convey important ideas to others!

Pep Talk: Do it! Do It

- **Do it right:** Invest Time
- **The Secret:** It is a *learned* skill – no magic!
- **The Key to Success:** Practice, practice, practice!

**Be Open Minded
Do experiment**
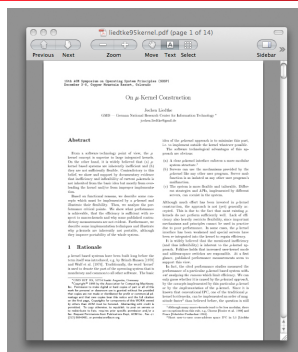

The Process (and outline)

A Three Step Simple Program!

- Step 1: Get the information
- Step 2. Create the Presentation
- Step 3. Present the 'Slides'

Step 1: Gather Information

- **Download Paper**
- **Ask you Self Questions?**
  - » Why am I doing this?
  - » What is the paper about?
  - » What is the main idea of the paper?
 - » What is the solution?

More Questions to Ask

- How does the paper relate to the current state of the art?
- Is it relevant? Any key ideas that are timeless?
- Are *you* inspired (can you, should you)?
- Does it generate new ideas? Does it inspire follow-up research?
- Was it convincing – what are the results?

Step 1: Gather Information

- **Skim the paper –**
  - » Read the abstract
  - » Read the bold print
  - » Skim the introduction
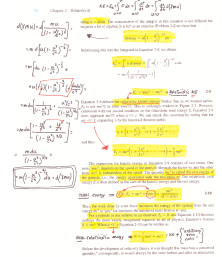 - » Skim the conclusion
  - » Read the middle
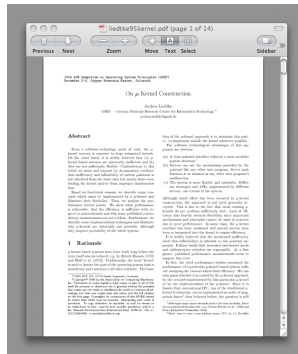
The Second Pass: Actively Read

- **Make a second pass! Get really into the paper.**
  - » **Highlight important points**
  - » **Take notes (in margins)**
    - – **Questions**
    - – **Examples**
    - – **Definitions**
    - – **Key Points**

After Reading

- **Collect your thoughts**
- **Write a brief summary of key points**
- **Be critical**
  - » **Assumptions**
  - » **Methods**
  - » **Reasoning**
  - » **Results**
  - » **Convincing?**
  - » **Relevance?**
- **Write a more extensive summary!**

Example Summary

- **Key idea, what is the author trying to do?**
- **What is the approach and how is it original?**
- **Reflection: limitations and assumptions**
- **What is results, impact of paper**
- **Constructive comments to presenter.**

Step 2: Create the Presentation

- **How do I get started?**
- **You will need to user Power point slides or something similar!**
- **Important – don't copy paste from papers**
  - » **Make it your own:** "Own it."
  - » **Easier to convey the information**

What style to Use (or Not)?

- **Use color to capture the attention of the audience, but not too much?**
- **Use color to capture the attention of the audience, but not too much?**

What are the slides for?

- **Organizes your thought, prompts you (add secret prompts, secret language)?**
- **Convey key points to your audience. Give your audience a feel about the paper and the general idea?**
- **Engage the audience, provoke them, challenge them?**
- **Notes to use after talk.**

Step 2: Create the Presentation

- **Assess your audience, Who are they?**
  - » What do they know, what do they need to know?
    - – **They read the paper?**
      - ● They read all the papers in advance?
    - – **They already took PL the year before**
    - – **Are fresh / alert and ready to learn?**

The Truth: The Real Audience

- **They are you - or YOU before you read the paper.**
- **They may be tired – alert them!**

Anatomy of a Talk

All good things come in three
1. **Motivate (20%)**
2. **Key Idea (80%, repeat repeat)**
3. **There is no 3.**

Motivation

- **2 minutes to engage before….**
  - » **Why should I tune it?**
  - » **What is the problem?**
  - » **Why is it interesting?**
    - – **Put yourself in their shoes!**

The Key Idea

- **You must identify a key idea. "What I did this summer" is No Good.**
- **Hierarchical –**
  - » **Key ideas of talk**
  - » **Key idea of each slide**
- **Be specific. Don't leave your audience to figure it out for themselves.**
- **Be absolutely specific. Say "If you remember nothing else, remember this."**
- **Organize your talk around this specific goal. Ruthlessly prune material that is irrelevant to this goal.**

Use Example(s) and Analogies

Examples are your main weapon

- To motivate the key ideas
- To convey the basic intuition
- To illustrate The Idea in action
- To show extreme cases
- To highlight shortcomings

The Outline

- Background
- The SASSY system
- Overview of epimorphism
- PI-reducibility is equal to MP
- Benchmarks and Results
- Related Work
- Conclusion and Future Work

But remember:
You are not presenting a mystery novel – tell the audience the most interesting stuff first (the key idea)! Why is this paper exciting!

Need an Outline – Why?

- Outline – conveys near zero information **before** your motivation
  - » Put 'maybe' an outline for orientation

Technical Detail

$$\frac{}{\Gamma \vdash k : \tau_k} \qquad \frac{\Gamma \cup \{x : \tau\} \vdash e : \tau'}{\Gamma \vdash \lambda x.e : \tau \to \tau'} \qquad \frac{\Gamma \vdash e_1 : ST\ \tau^\circ\ \tau \quad \Gamma \vdash e_2 : \tau \to ST\ \tau^\circ\ \tau'}{\Gamma \vdash e_1 \gg= e_2 : ST\ \tau^\circ\ \tau'}$$

$$\frac{\Gamma \vdash e : \tau}{\Gamma \vdash \mathtt{returnST}\ e : ST\ \tau^\circ\ \tau} \qquad \frac{\Gamma \vdash e : \tau}{\Gamma \vdash \mathtt{newVar}\ e : ST\ \tau^\circ\ (\mathtt{MutVar}\ \tau^\circ\ \tau)} \qquad \frac{\Gamma \vdash e : \mathtt{MutVar}\ \tau^\circ\ \tau}{\Gamma \vdash \mathtt{readVar}\ e : ST\ \tau^\circ\ \tau}$$

$$\frac{\Gamma \vdash e_1 : \mathtt{MutVar}\ \tau^\circ\ \tau \quad \Gamma \vdash e_2 : \tau}{\Gamma \vdash \mathtt{writeVar}\ e_1\ e_2 : ST\ \tau^\circ\ \mathtt{Unit}} \qquad \frac{}{\Gamma \cup \{x : \forall \alpha_i.\tau\} \vdash x : \tau[\tau_i/\alpha_i]}$$

$$\frac{\Gamma \vdash e : \tau' \to \tau \quad \Gamma \vdash e' : \tau'}{\Gamma \vdash e\ e' : \tau} \qquad \frac{\Gamma \vdash e : ST\ \alpha^\circ\ \tau}{\Gamma \vdash \mathtt{runST}\ e : \tau}\ \alpha^\circ \notin FV(\Gamma, \tau)$$

$$\frac{\forall j. \Gamma \cup \{x_i : \tau_i\}_i \vdash e_j : \tau_j \quad \Gamma \cup \{x_i : \forall \alpha_{j_i}.\tau_i\}_i \vdash e' : \tau'}{\Gamma \vdash \mathtt{let}\ \{x_i = e_i\}_i\ \mathtt{in}\ e' : \tau'}\ \alpha_{j_i} \in FV(\tau_i) - FV(\Gamma)$$

**Figure 1.** Typing Rules

Omit Technical Detail

- Present **specific** aspects only; refer to the paper for the details (if it is too complicated)
  - » Key aspects : Do Present
- By all means have backup slides to use in response to questions
- Know you audience!
- Onion Approach work well:
  - » gently peel the layers of information layers interpretation, layers of meaning. Asking "... you mean?" and "What else?" persistently go.

Present Plots/Data

- Say what it is and what it shows (don't assume audience can tell what is displayed)
  - » Tell them the metric (and why it is important to illustrate) and Variables (and why are these the important variables)
  - » AND What is held constant? (i.e., the assumptions)
- Highlight important characteristics – (bumps, trends)
  - » Make sure you understand the data!

Example: Performance
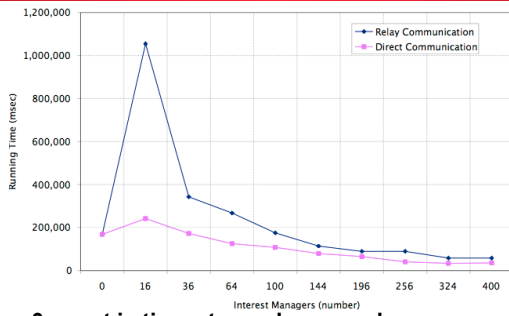
- **0 agent is time stepped approach**

Do not apologize!

- "I didn't have time to prepare this talk properly"
- "My computer broke down, so I don't have the results I expected"
- "I don't have time to tell you about this"
- "I don't feel qualified to address this audience"

Presenting your talk!

- Go over slides the day of your talk (after practice)!
- Know the general outline in your head, visualize the order – and what you what to convey –
    - » Look at the slides!

Be your self! We are friendly

- Have fun!
- Be enthusiastic!

Enthusiasm

- If you do not seem excited by your presentation, why should the audience be?
- It wakes 'em up
- Enthusiasm makes people dramatically more receptive
- It gets you loosened up, breathing, moving around
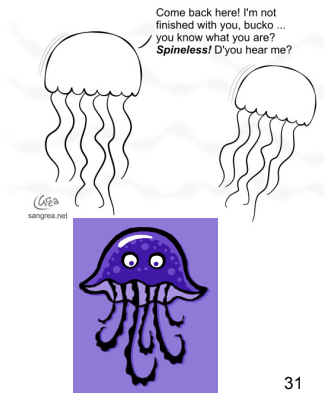
The Jelly Fish Effect!

- Symptoms
    - » Inability to breath
    - » Can't stand!
    - » Brain is malfunctioning

Treatment

- **You are not Alone!**
  - » **Everyone gets nervous!**
- **Breath – that is it!**

Come back here! I'm not finished with you, bucko ... you know what you are? *Spineless!* D'you hear me?

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Being seen, being heard

- **Point at the screen, the projector, be animated**
- **Make eye contact**
  - » **Speak to someone you know**
  - » **Speak to everyone.**
  - » **Speak to someone at the back of the room**
- **Connect with the audience – try to listen to them and their questions.**

Presenting your slides

A very annoying technique

is to reveal

your points

one

by one

by one, unless…

there is a punch line

Plan your talk and timing

> **Absolutely without fail, finish on time**

- **Audiences get restive and essentially stop listening when your time is up. Continuing is very counter productive**
- **Simply truncate and conclude**
- **Do not say "would you like me to go on?" (it's hard to say "no thanks")**

Follow the Rule!

- **What Rule?**
  - » **Only three (1) Motivate – (2) and convey the key ideas and (3) there is no three**
  - » **Repeat.**

There is hope!

> **The general standard is so low that you don't have to be outstanding to stand out**

- **You will attend 50 x as many talks as you give. Watch other people's talks intelligently, and pick up ideas (appreciate) for what to do and what to avoid (learn, everyone makes mistakes).**