

How to Communicate

Tao LIN

September 8, 2023



- 1 A General Guide
 - Why Communication Matters?
 - The 7 **C**'s of Communication
- 2 How to Communicate With Your Collaborator?
 - How to Work With Your Advisor Effectively
 - How to Share Progress With Your Mentors/Collaborators?
 - How to Work With a Busy Advisor?
 - How to Work With Your Senior Advisor(s)?
- 3 How to Ask Questions The Smart Way (From CS Perspective)?
 - Before You Ask
 - When You Ask
- 4 How to Do Presentation

Course schedule

Week	Date	Topics
1	2023. Sep. 01	Introduction to CS & AI
2 (this week)	2023. Sep. 08	How to communicate
3	2023. Sep. 15	How to do presentation
4	2023. Sep. 22	How to do research I
5	2023. Oct. 07	How to do research II
6	2023. Oct. 13	Academic paper writing
7	2023. Oct. 20	Sharing the experience of writing excellent academic papers and rebuttal
8	2023. Oct. 27	Practice course

Acknowledgement

- [The 7 Cs of Communication](#), World of Work Project
- [How To Ask Questions The Smart Way](#), Eric Steven Raymond
- [Awesome Tips](#), JiaBin Huang

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Communication is the key to your career success!

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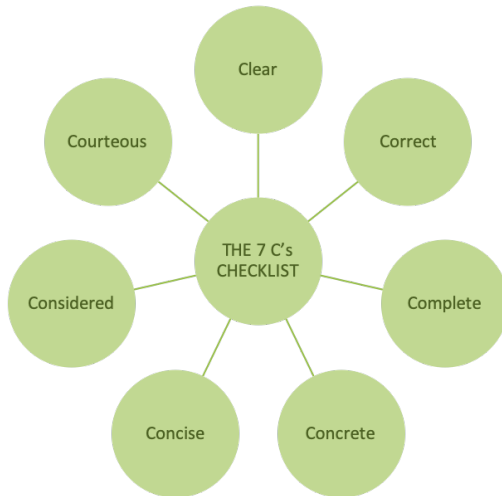
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The 7 C's of communication



7 C: Clear

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- summary and deduction (if possible)

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Some communications simply must be correct, clear and concise.

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Completeness

is one of the most important of the 7 Cs of communication.

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- ensuring that core communications focus on core messages.

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- your arguments should be based on solid facts and opinions from credible sources
- you should share irrefutable data to support your argument.

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adjective

giving a lot of information clearly and in a few words; brief but comprehensive.

"a concise account of the country's history"

Similar:

succinct

short

brief

to the point

pithy

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The more you say, the more risk of confusion \Rightarrow focuses solely on the key points you need to deliver.

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[Learn to pronounce](#)

adjective

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"she was courteous and obliging to all"

Similar:

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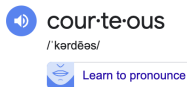
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- 1 Increasing the effectiveness by
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- 3 Please always consider your messages from the point of view of the audience!

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Tips to help make sure your communications are considered and coherent:

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- Each communication you issue is coherent within itself
- You should also ensure consistency of message when delivering multiple communications.

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- has limited knowledge
- but should always try to help YOUR research (unless disappointed)!

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How to work with your advisor effectively: know the role of your advisor

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- ✗ In-only: You do everything and report the final results.
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- ✓ In & Out: You get frequent and valuable guidance.



How to work with your advisor effectively: show your work

How do you get the best guidance from your advisor?

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How do you get the best guidance from your advisor?

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How do you get the best guidance from your advisor?

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Describe

- the detailed process you went through,
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- the methodology you adopted,
- and the interpretations of the results you got.

How to work with your advisor effectively: Don't try figuring everything out yourself

- **(precondition)** Please first try to be independent!!!

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- BUT, If you spend 15 mins googling and still don't know where to start,
- please reach out to your peers/mentors.
- Asking for help is not a sign of weakness.

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- Send frequent and concise updates along the way.

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- **After**: Send a summary and an actionable plan to keep everyone on the same page.

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- Discuss the problems with your mentors/collaborators.
- Help them help you get unstuck.

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- Put ALL the progress/results/figures/discussions in one single slide deck.

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- This saves **5 mins** in the meeting locating files and trying to retrieve results two weeks ago when someone asks for it.

How to work with your advisor: Communicate at the right level of abstraction

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- Maintain meeting minutes that everyone agrees upon so you have consistent guidance.

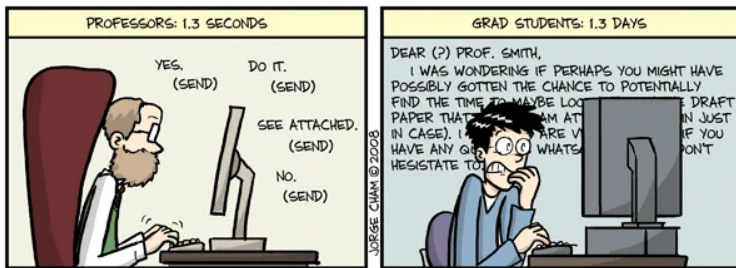
How to work with your advisor: leverage async discussions

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AVERAGE TIME SPENT COMPOSING ONE E-MAIL



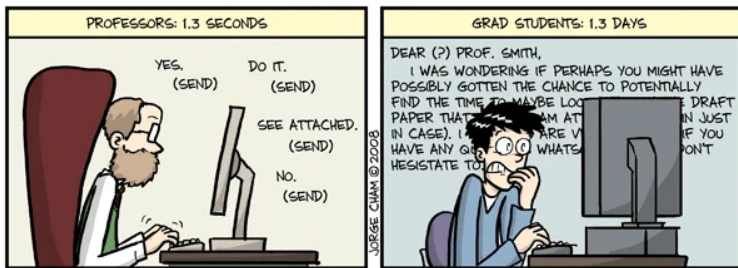
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Keep your advisor engaged and excited about your research.

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- One topic at a time

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 - ✓ Send a clear meeting agenda with allocated time.

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Throughout your research project, 99% of the time your approach DOESN'T WORK (yet)

How could we share these “failed results”
and have productive conversations with your mentors/collaborators?

How to share progress

- Design: Why do we want to do this experiment?
- Hypothesis: What do we expect to see?
- Observation: What did we see?
- Interpretation: Is this expected/working? (please no “It doesn’t work.”)
- Visualization: Any better ways to see the results?
- Actionable next steps: What steps would you take?
- Actionable next steps: Stick with the plan.

How to share progress (Design: Why do we want to do this experiment?)

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- Plz treat your mentors as goldfishes.
- Remind them WHY you did a particular experiment or implement a particular thing.
- This will provide the context for them to help interpret the results and steer the direction of your research.

How to share progress (Hypothesis: What do we expect to see?)

- Before showing your results,

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- Before showing your results,
- comment on what should have happened (if everything is correct)?

How to share progress (Observation: What did we see?)

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- Don't just say "It doesn't work."

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- Don't just say "It doesn't work."
- Describe HOW it fails (with details and ideally in a self-contained manner).

How to share progress (Interpretation: Is this expected/working? please no “It doesn’t work.”)

After showing your results, comment on how the results align with or deviate from your expectations.

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 - I’ve narrowed down the problem to step B .
 - Until step A , you can see that it works, because you put in X and you get Y out, as we expect.
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 - I have ruled out W as the cause.
 - Next, I will design experiments to isolate the step Z .

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Seeing the results with a good visualization helps

- deepen our understanding

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- If you think the plan should be revised, TALK to your mentors and CONVINCE them.

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So what should we do?

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- Try ad hoc meetings
 - Try to find a few minutes to meet with your advisor after their class or during office hours
 - Be prepared, concise, and respectful of their time.

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- Explore different advisors or co-advisors?
 - If working with your current advisor is consistently challenging, consider exploring other advisors who align better with your research interests.

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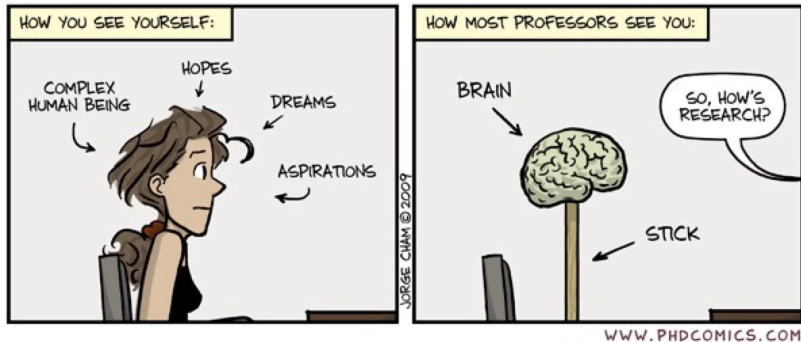
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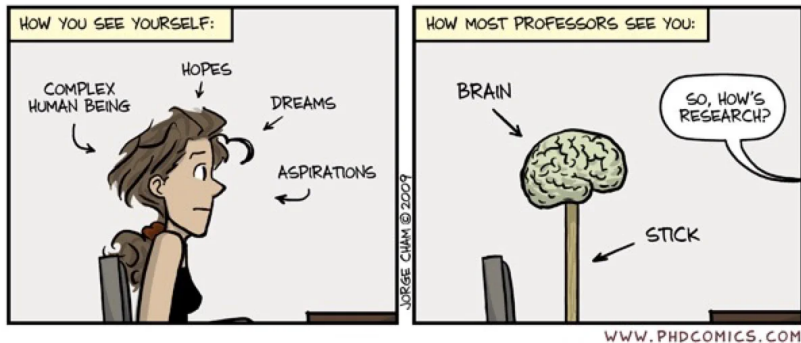
Check out below for some similar tips.

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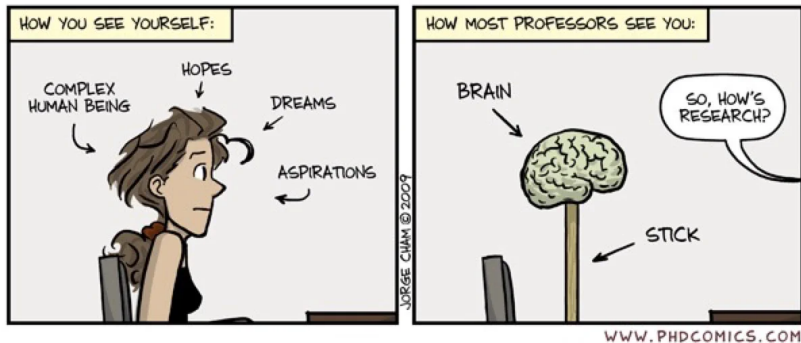
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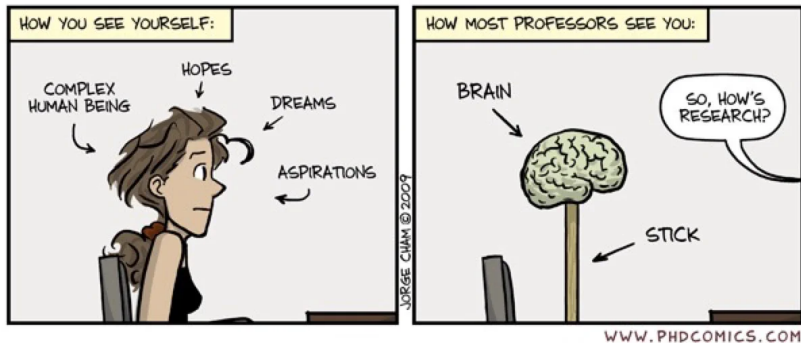
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- Your advisor is an INPUT-OUTPUT machine.
- Senior professors won't keep track of all the latest papers. But they sure know the fundamentals.
- Pre-process/abstract/simplify your work so that they can give you great feedback.



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- Senior professors may have deep insights to your research problem. But, they don't have the modern toolboxes you are familiar with.
- Instead of taking their suggestions as is (e.g., implement some heuristics), map them into modern frameworks.

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When you are just getting started on your first project, make sure to find hands-on collaborators (other assistant prof, post-doc, or senior students in the lab).

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You will learn valuable skills from them!

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 - what have you done?

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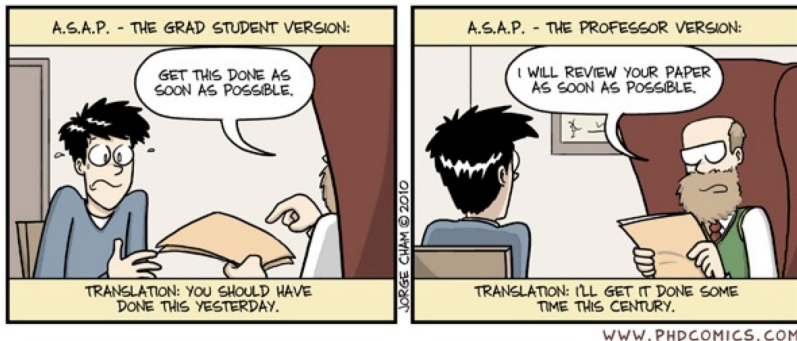
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 - what have you done?
 - what you will do?
 - when you will be on vacation?

Be specific

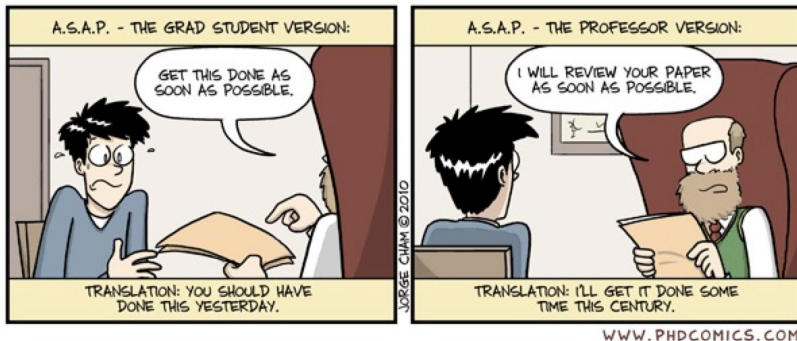
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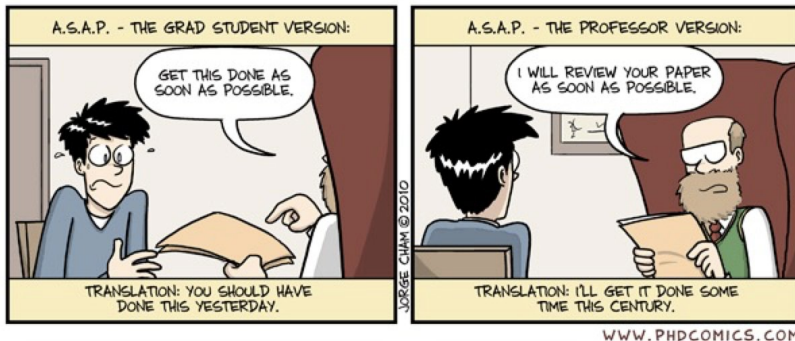
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- ✓ You get to know when to follow up again.



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Emphasize it again!

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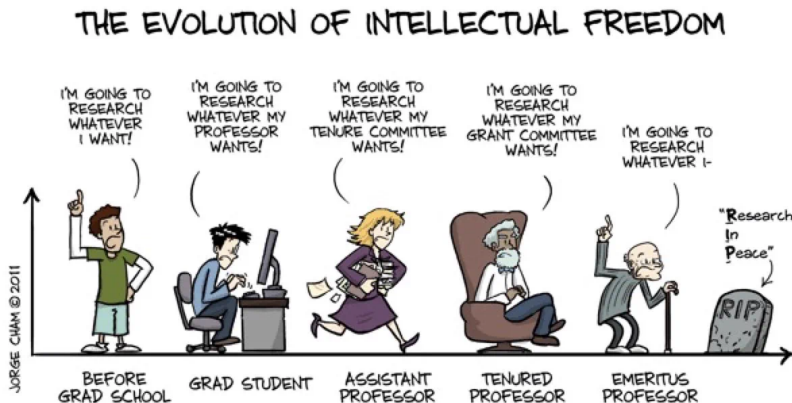
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- Many students feel intimidated about sharing results that are “not ready”.
- It often leads to a vicious cycle of “not ready” -> “no feedback” -> “build up more stress”.
- Break that cycle and keep engaging with your advisor.

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Work closely with your advisor to find common interests
⇒ so that they can provide their best support.

THE EVOLUTION OF INTELLECTUAL FREEDOM

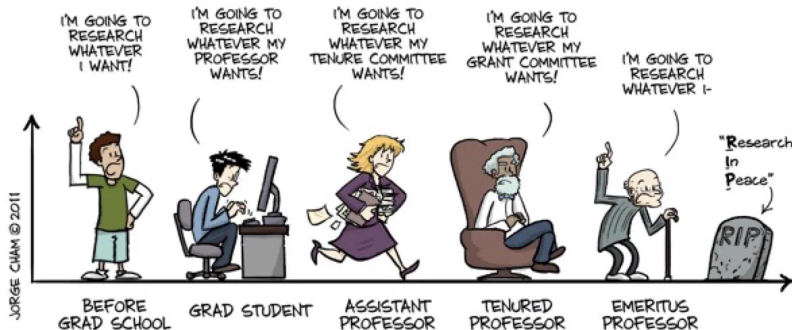


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- 2 How to Communicate With Your Collaborator?
- 3 **How to Ask Questions The Smart Way (From CS Perspective)?**
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Before asking a technical question, do the following:

Establish that you're not being a lazy sponge and wasting people's time.

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- Try to find an answer by searching the archives of the forum or mailing list you plan to post to.
- Try to find an answer by searching the Web.
- Try to find an answer by reading the manual.
- Try to find an answer by reading a FAQ.
- Try to find an answer by inspection or experimentation.
- Try to find an answer by asking a skilled friend.
- If you're a programmer, try to find an answer by reading the source code.

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- cross-post to too many different newsgroups
- post a personal e-mail to somebody who is neither an acquaintance of yours nor personally responsible for solving your problem

Search, and then ask on

Sites to ask questions

- StackOverflow
- MathOverflow
- Zhihu
- Reddit
- Zhihu
- Quora
- Mailing list
- forums
- etc

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- *deviation*: it describes the deviation from expected behavior.

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 - Don't use instant messaging shortcuts.

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- Describe any possibly relevant recent changes in your computer or software configuration.
- If at all possible, provide a way to reproduce the problem in a controlled environment.

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Example 2

- **Stupid:**

I'm getting back-to-back SIG11 errors on kernel compiles, and suspect a hairline crack on one of the motherboard traces. What's the best way to check for those?

- **Smart:**

My home-built K6/233 on an FIC-PA2007 motherboard (VIA Apollo VP2 chipset) with 256MB Corsair PC133 SDRAM starts getting frequent SIG11 errors about 20 minutes after power-on during the course of kernel compiles, but never in the first 20 minutes. Rebooting doesn't restart the clock, but powering down overnight does. Swapping out all RAM didn't help. The relevant part of a typical compile session log follows.

The raw symptoms of what goes wrong
indeed are better than your interpretations and theories!

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Presentation skills for computer science!

(next week)

Thanks & Question Time!