

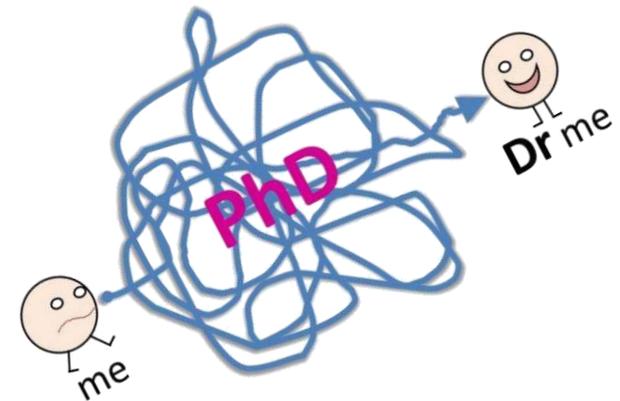
What's to be a Ph.D. ~~Candidate~~ about?

Survivor

Techniques? Art? or both!?

Phinished

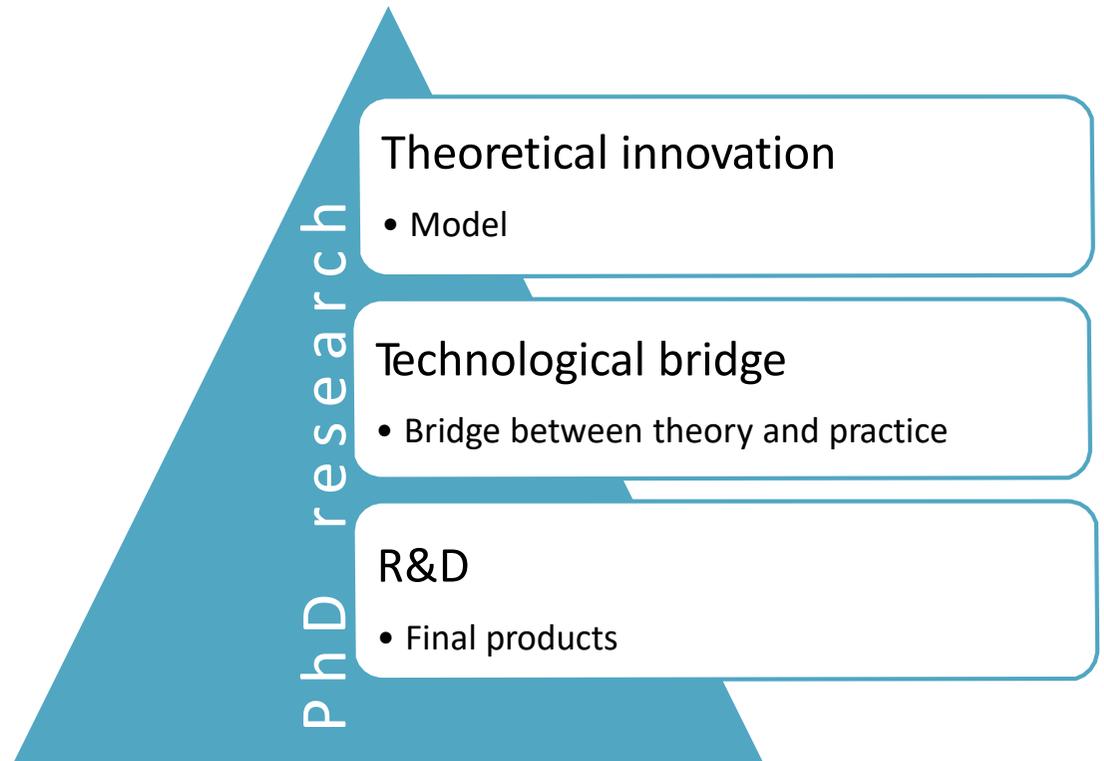
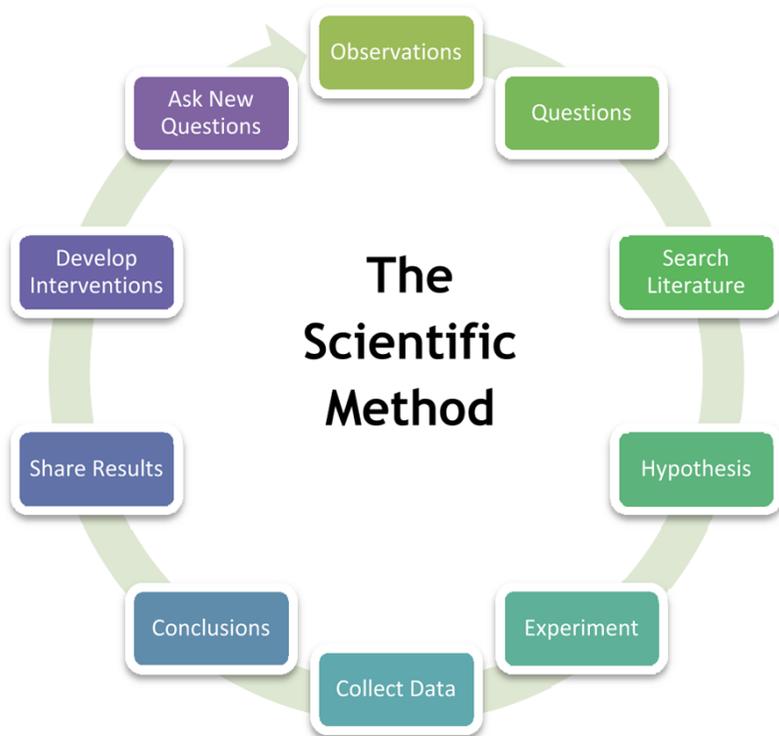
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What's PhD research?

- Contribute to the human knowledge
 - Something innovative
 - Solve a given problem
- A PhD student is not (**only**) an Engineer!
 - Should acquire new skills
 - Learn to run a scientific process
 - Implementing a prototype is not research!

What's research?



3 Years to do the Job!

Your 1st Ph.D. year

Understand why you're here !

- Keywords: *read*, **read** and read again!
- Then, **take notes!**
- Start with recent **surveys** in your domain
- Focus on the **challenges** identified in the surveys
- Find out the challenges where your **topic** fits

→ **It's time consuming! And boring too...**

Your 1st Ph.D. year

- State of the art:
 - Models, methods, approaches, algorithms, APIs, prototypes, etc.
 - Need to learn the vocabulary, the way others are doing the job, ... (you will never be the first one ;-)
 - Their “+”, “-” and possible improvements
 - Perform a classification (if possible)
 - Come up with good ideas to develop the next year
 - Write your report

→ So, no stress...(not yet)

Your 2nd Ph.D. year

No good idea, not at all!

- (Do not) **freak out...**
- Check out what went wrong!
- Start over the process of the 1st year

You have some nice ideas!

- Dig deeper into your ideas:
 - Develop your research
 - Publish your research

→ But HOW to do that?

Develop your idea Progressively

Workshop/Poster

- Idea is expressed clearly
- Some empirical results or prototyping

Conf. C/B

- Idea well-formalized with existing tools
- Some experimental results

Conf. B+/A

- Idea well-formalized with a new insight in the theoretical model
- Some experimental results

Conf. A*

- Idea well-formalized with solid mathematical model
- Solid experimental results

Journal B/A

- Extended version of your conference paper (at least 30% new material)

Why doing publications ?

- Because this is the way to do science !
- It's mandatory if you want to prove the quality of your work
- Because you can discuss / exchange with other scholars
 - And visit nice places (only for conferences)
 - And have a drink with colleagues
 - And many more!
- Because you're starting your network
 - Basis of your futur activities

Example: a new time machine



People do not like getting wet...



Not suitable for claustrophobic



Seriously, just one seat and so old



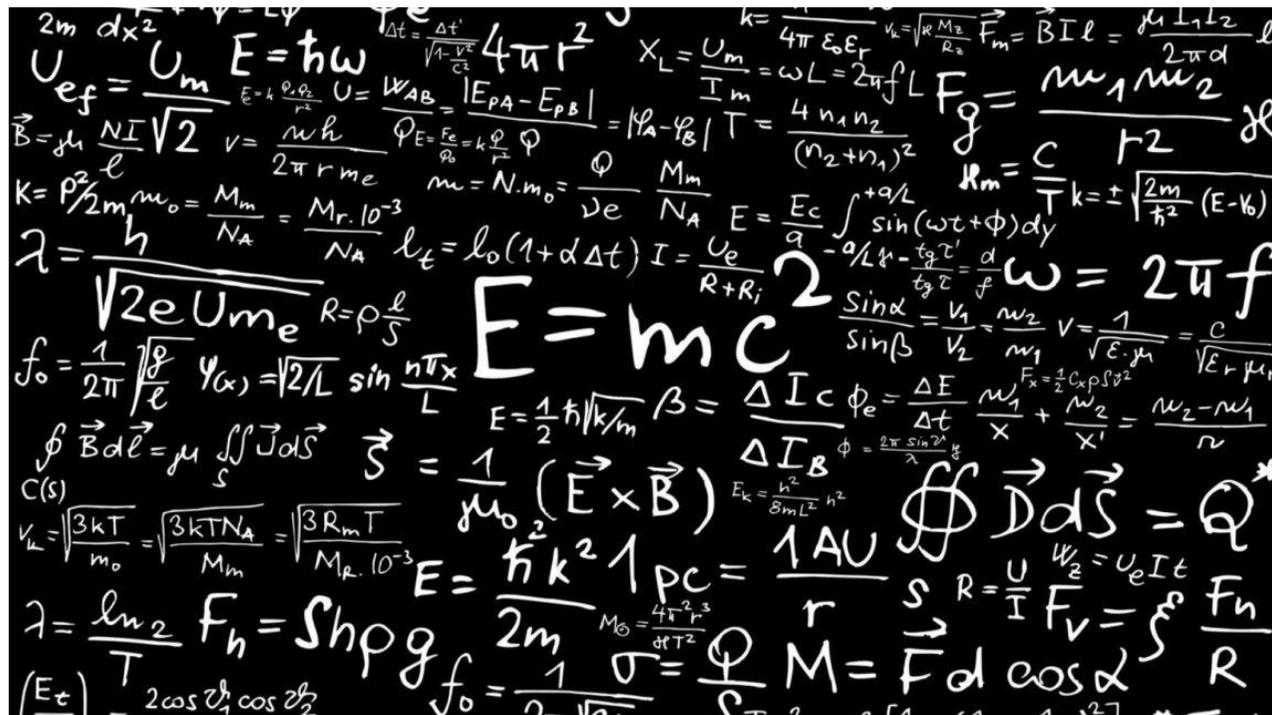
!...cool, but does not look safe!

Example: a new time machine

- Let's give the De Lorean an extreme makeover and make it fly:
 - People inside the car cannot get wet!
 - It is not a phone box, so suitable to claustrophobic!
 - It is not a one-seat sled! I can travel with friends!
 - It is designed to enforce safety and security.

Example: a new time machine

- Work the math (seriously)!



Example: a new time machine

- Design a prototype
- Do some experiments and analyze the results
- Write your **research** report:
 1. Start from your method
 2. Then your experiments
 3. The state of the art
 4. Conclusion and future work
 5. Finally, the introduction



Example: a new time machine

- Your supervisor(s) is (are) supposed to give you feedback
- How your supervisors might see your work!



From a research report to a “good” paper

- If your research report is OK then extract a research paper
- Your research report is not a paper:
 - You need here some supervisors’ advices
- A good paper is a good story-telling:
 - Technical requirements
 - Writing style

Where to submit your paper?

- Ranking + deadline(s) + number of pages + format (IEEE, ACM, LNCS, etc.)
- Conference selection:
 - Make your conference list from the papers you've read (state of the art)
 - Ask your supervisor(s)
 - Mailing lists:
 - Bull-i3: <http://icube-web.unistra.fr/gdri3/index.php/Bull-i3>
 - EGC: http://www.egc.asso.fr/13-FR-Liste_de_diffusion
 - DBWorld: <https://research.cs.wisc.edu/dbworld/>
 - ...
- Conference ranking:
 - <http://portal.core.edu.au/conf-ranks/>

How to write a “good” paper?

- Technical requirements (Skeleton or bones)
 - **What** is the subject of your paper?
 - **Why** are you trying to solve this issue?
 - **How** do you solve the issue?
 - **What** are the results you obtained so far?
 - **What** is still to do?
- Write a mini-article
 - Intro, SotA, Your work, Results, Conclusion
 - Why your method is really better ? What’s new ?

https://www.cyril-rabat.fr/enseignement/PPRO0502/Format_mini-article.pdf

<https://www.nature.com/scitable/ebooks/english-communication-for-scientists-14053993/118519636#bookContentViewAreaDivID>

How to write a “good” paper?

- Writing style requirements (blood, fat, flesh)
 - Short sentences
 - Go straight to the point
 - Be kind with the authors you criticized
 - Use correct grammar, no typos (the fewer, the better)
- Use some collaborative tools (make it as easy as possible)
 - Overleaf / Sharelatex
 - Mendeley / Zotero / EndNote

Submission...

- Before submission:
 - Your name comes first!
 - Check the reviewing type: simple or double blind
 - Be careful with submission platforms (EDAS, EasyChair, “home-made”, etc.)
- After submission:
 - Enjoy the time between the submission and the notification date...
 - 2 possible outcomes:
 - Acceptance 😊
 - Rejection 😞

In case of acceptance 😊

- Prepare the camera-ready based on the comments of the reviewers
- Check the compliance with the editing rules imposed by the conference
- Go (survive) through the registration process:
 - ULR procedure is really **painful** and **time consuming!**
- Check if the conference offers student discount and/or student grant
- Prepare the “mission”!
- Prepare your **presentation** *(I need another presentation to deal with that!)*
- Enjoy the conference

Use the template from the University / Lab
-> Not like me now...

In case of rejection 😞

- Take a couple of days (not weeks!) to process the rejection
- Read carefully the reviewers' comments
 - Are the comments fair and objective?
- Work on the weaknesses of your paper
- Rewrite the paper
- Submit your paper somewhere else...

→ **fingers crossed**

Your 3rd Ph.D. year

- You're supposed to have published (a) paper(s)!
 - So, in the 1st half you can improve your research track with journal paper (Time machine 2.0)
 - In the 2nd half, start writing your manuscript:
 - Between 3 and 6 months
 - Check the min/max number of pages (avoid **stuffing!**)
 - The state of the art part is the most exhausting one!

WRITING YOUR THESIS OUTLINE NOTHING SAYS "I'M ALMOST DONE" TO YOUR ADVISOR/ SPOUSE/PARENTS LIKE PRETENDING YOU HAVE A PLAN

STEP 1 Aim for a respectable number of chapters:

THESIS OUTLINE

- 1.
- 2.
- 3.
- 4.
5. ← chapter #'s
- 6.
- 7.

5 = "That's IT??"
6-7 = "Not bad"
8+ = "Are you crazy??"

STEP 2 Fill in the "freebies":

THESIS OUTLINE

1. INTRODUCTION
2. LIT REVIEW
3. METHODOLOGY
- 4.
- 5.
- 6.
7. CONCLUSIONS

You're half way done!

STEP 3 Make up titles for the "meat" chapters:

6. LIT REVIEW
3. METHODOLOGY
4. (THAT STUFF YOU DID YOUR FIRST YEAR)
5. (STUFF YOU'RE SUPPOSED TO BE DOING NOW)
6. (MAKE STUFF UP)
7. CONCLUSIONS

(It'll be years before you actually have to work on that later chapter, and by then your thesis topic will have changed anyway)

STEP 4 Voilà! You just bought yourself another two years

So, how's your thesis going? i have an outline!

JORGE CHAM © 2006

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→ Look for a job!